

4. SWP Purwasuka
The primary center is Cikampek supported by Karawang, Subang, Purwakarta and Pamanukan.
5. SWP Bandung Raya
The primary center is Bandung supported by Garut, Sumedang and Cianjur
6. SWP Cirebon
The primary center is Kotamadya Cirebon supported by Sumber, Kuningan, Jatibarang and Kadipaten.
7. SWP East Priangan
The primary center is Tasikmalaya supported by Banjar.

4.3.2 Kabupaten and Kotamadya (Level II) Plans

Kabupaten and Kotamadya local governments are to prepare their development plans along such guide lines as provided by the National Five-Year Development Plan (Pelita VI : which is now under preparation and will become effective in April 1994), the West Java Provincial Structure Plan and the Jabotabek Metropolitan Development Plan.

According to the Presidential Decree (Inpress) No. 13 the Jabotabek Development Coordination Board (BKSP) has existed since 1976, but it has no effective powers in relation to plan preparation. Consequently, the Directorate of City and Regional Planning within the Public Works Ministry has always assisted in the process of plan formulation and is acting as the coordination entity among the planning agencies concerned.

The study team made several visits to Regional Planning Board (BAPPEDA) of Kabupatens and Kotamadya (local) governments in Botabek for collecting data and information. Not all the local governments have their structure plans, some are still under process toward finalizing by end of 1993.

(1) Tangerang

Kotamadya Tangerang

Kotif Tangerang was recently upgraded administratively to Kotamadya Tangerang, and the government offices are separating from those of Kabupaten Tangerang. Therefore, the Regional Planning Board (BAPPEDA) of Kotamadya Tangerang is now preparing a new structure plan. The result of interview and discussion meetings with them could assure the necessity of the project road (East-West Axis) and the incorporation of the study proposal into their structure plan.

The existing land use and the functional road network in Kotamadya Tangerang are presented in Figs. 4.3.2 and 4.3.3.

The development direction is briefly mentioned in the volume of "Data Complete" for the Kotif Tangerang Urban Structure Plan Revision 1992-2012, that is :

Urban Function

- Administrative center of (then) Kotif Tangerang
- Development center of large scale industries in the Jabotabek area, accommodating required services at regional and national levels
- Commercial center serving the west part of the Jabotabek area
- Absorption of population overflow from DKI Jakarta

Population Density

- Kotif Tangerang is projected to have a population about 1 million in 2005
- Kecamatan Tangerang will be densely inhabited at 100-200 persons/ha
- Other Kecamatan's density will average in the range about 40 to 70 persons/ha

Urban Structure

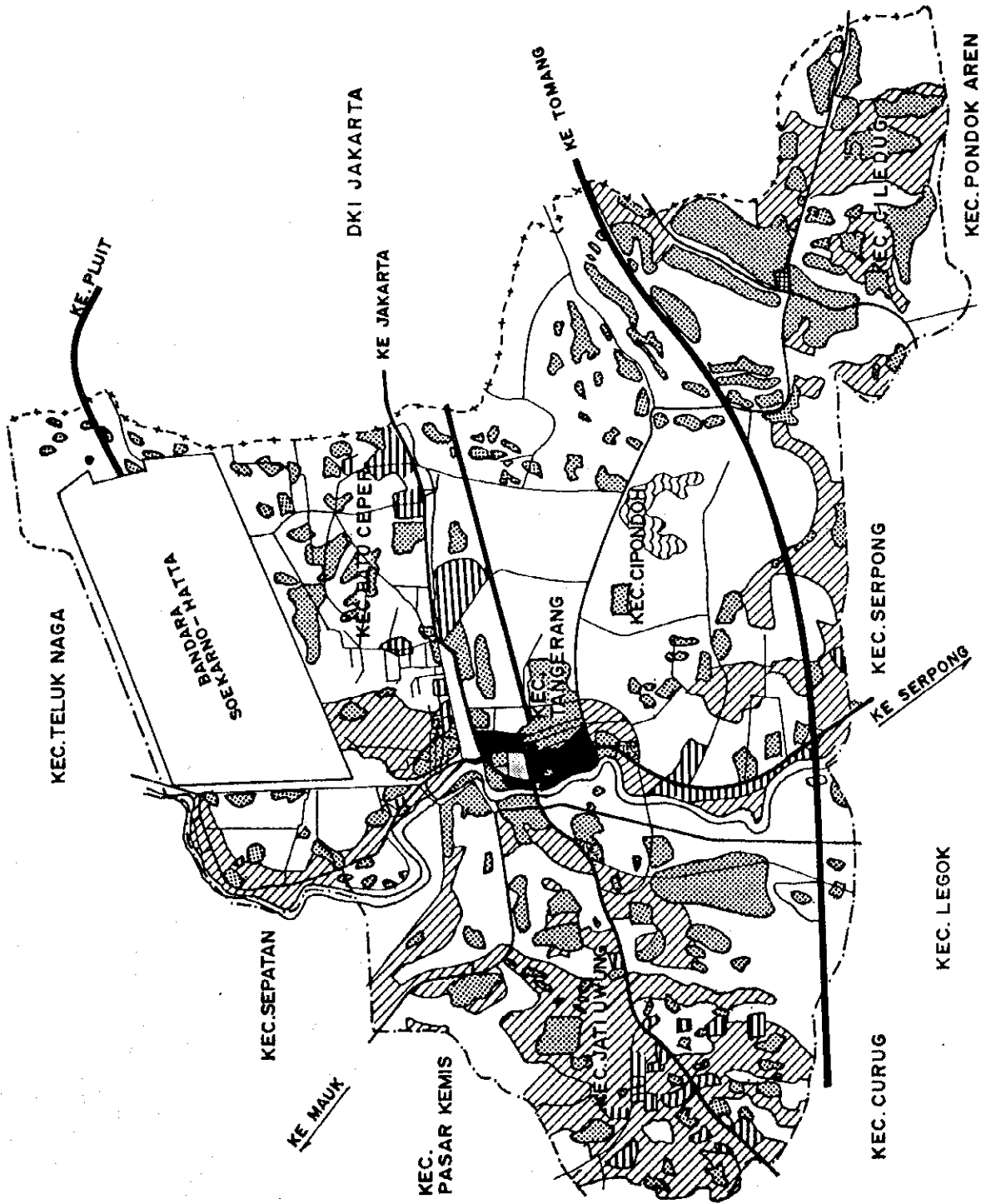
- Tangerang city is the trading center with the population being 850,000 persons in 2005
- Other service centers are located at
 - Ciledug with the population of 250,000 persons in 2005
 - Karawaci with the population of 200,000 persons in 2005
 - Cikokol with the population of 200,000 persons in 2005
- Housing development is preferred towards the south of the city, and the development should be controlled in the area between Soekarno Hatta Airport and the north of the city
- Industrial development should be directed to the west of the city, and controlled to the east of the city
- Development of office/business activities should be diversified to the south or south-east of the city.

**Fig. 4.3.2
EXISTING LAND USE IN
KODYA TANGERANG**

- Legend:**
- Provincial Boundary
 - Kecamatan Boundary
 - Railway
 - Roads
 - River
 - Housing
 - Commercial
 - Office
 - Rice field
 - Industry
 - Pond
 - Dry Field
 - Terminal







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DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA**



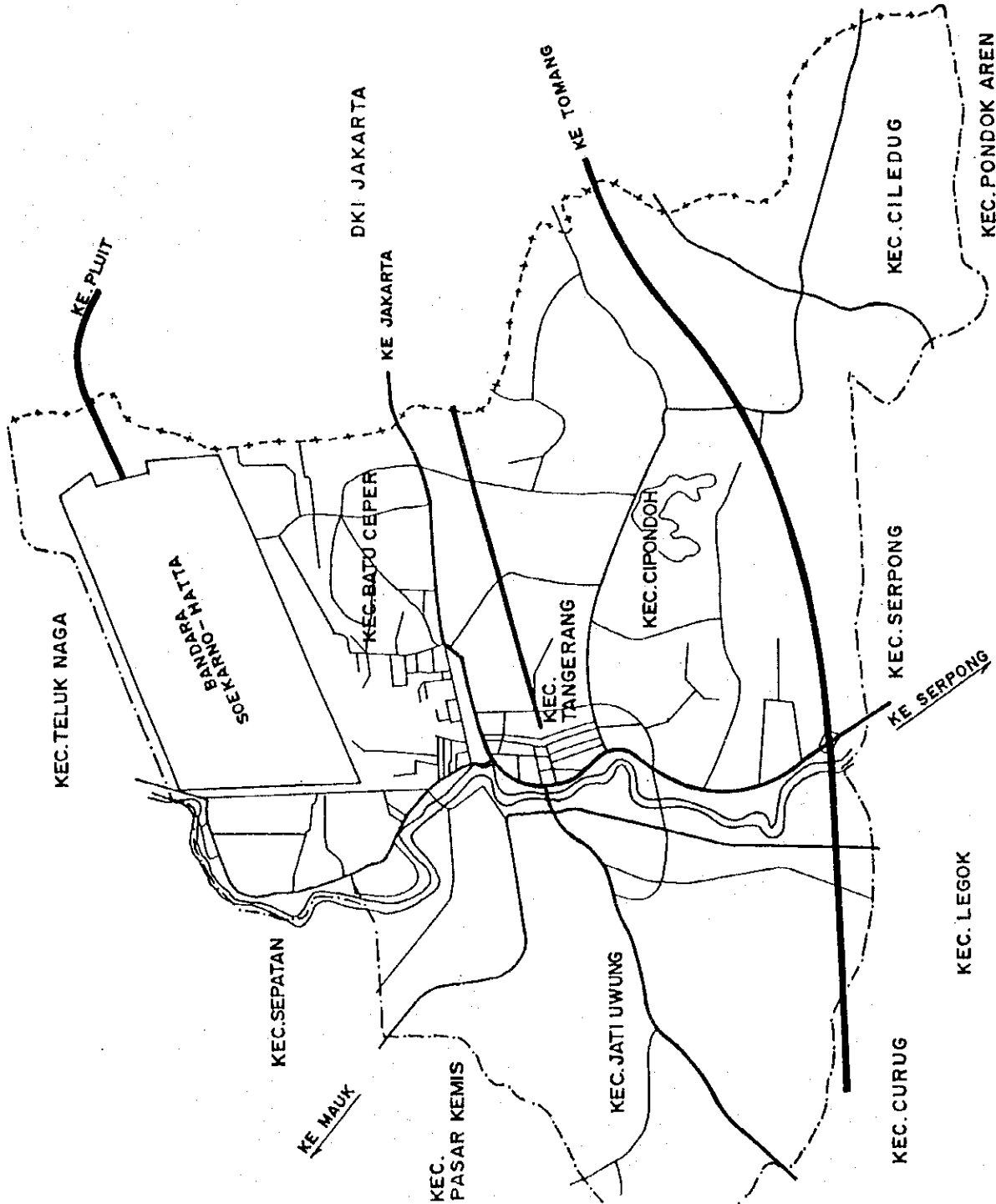
Source : Revisi Rencana Umum Tata Ruang Kota Kotif Tangerang
1992-2012, Kompilasi Data 1992

Fig. 4.3.3
FUNCTIONAL ROAD NETWORK
IN KODYA TANGERANG

- Legend:
-  Tollway
 -  Arterial Road
 -  Collector Road
 -  Local Road



FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA



Kabupaten Tangerang

The BAPPEDA Kabupaten Tangerang is also processing the revision of previous structure plan. The Kabupaten capital, now located at Tangerang City, is intended to move to Tigaraksa, though it was allegedly denied in the news paper.

According to the development strategy of Kabupaten Tangerang, the administrative boundary area, including Kotamadya Tangerang is divided into two development regions, WP-I and WP-II. The growth centers of these regions are designated Tangerang and Balaraja as shown in Fig. 4.3.4.

The WP-I is further divided into 6 sub-regions and one special zone as listed below :

- 1) Teluknaga development sub-region
- 2) Sepatan development sub-region
- 3) Mauk development sub-region
- 4) Curug development sub-region
- 5) Serpong development sub-region
- 6) Ciputat development sub-region
- 7) Cikupa/Pasar Kemis/Jatiuwung Special Industrial Zone

The WP-II Balaraja consists of the following two sub-regions.

- 1) Kronjo development sub-region
- 2) Tigaraksa development sub-region

Since the structure plan of Kabupaten Tangerang does not become available at present, the existing broad land use situation is presented in Fig. 4.3.5.

(2) Bekasi










Kabupaten Bekasi includes Kota Administrative (Kotif) Bekasi which is the urban area headed by a mayor but has not a Peoples Representative Council (DPRD).

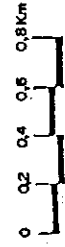
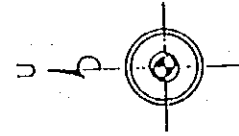
The existing land use in Kotif Bekasi is presented in Fig. 4.3.6, and it discloses that the area is divided in the east-west direction by railway and tollway. The housing development is penetrating into the paddy field and plantation area. The urban sprawl is evenly taking place in the area. The industrial development is evolving relatively wide in area on the southern side of the railway, encompassed with the Jakarta boundary, railway and Jl. Raya Bekasi. A large industrial area is also recognized along the branch road diverted from Jl. Raya Bekasi to the east direction.

Jl. Raya Bekasi is the only arterial road, other than the Jakarta-Cikampek Tollway, that directly connects with DKI Jakarta, and it is located in the immediate south of the railway. Accordingly, it is unavoidable for those living

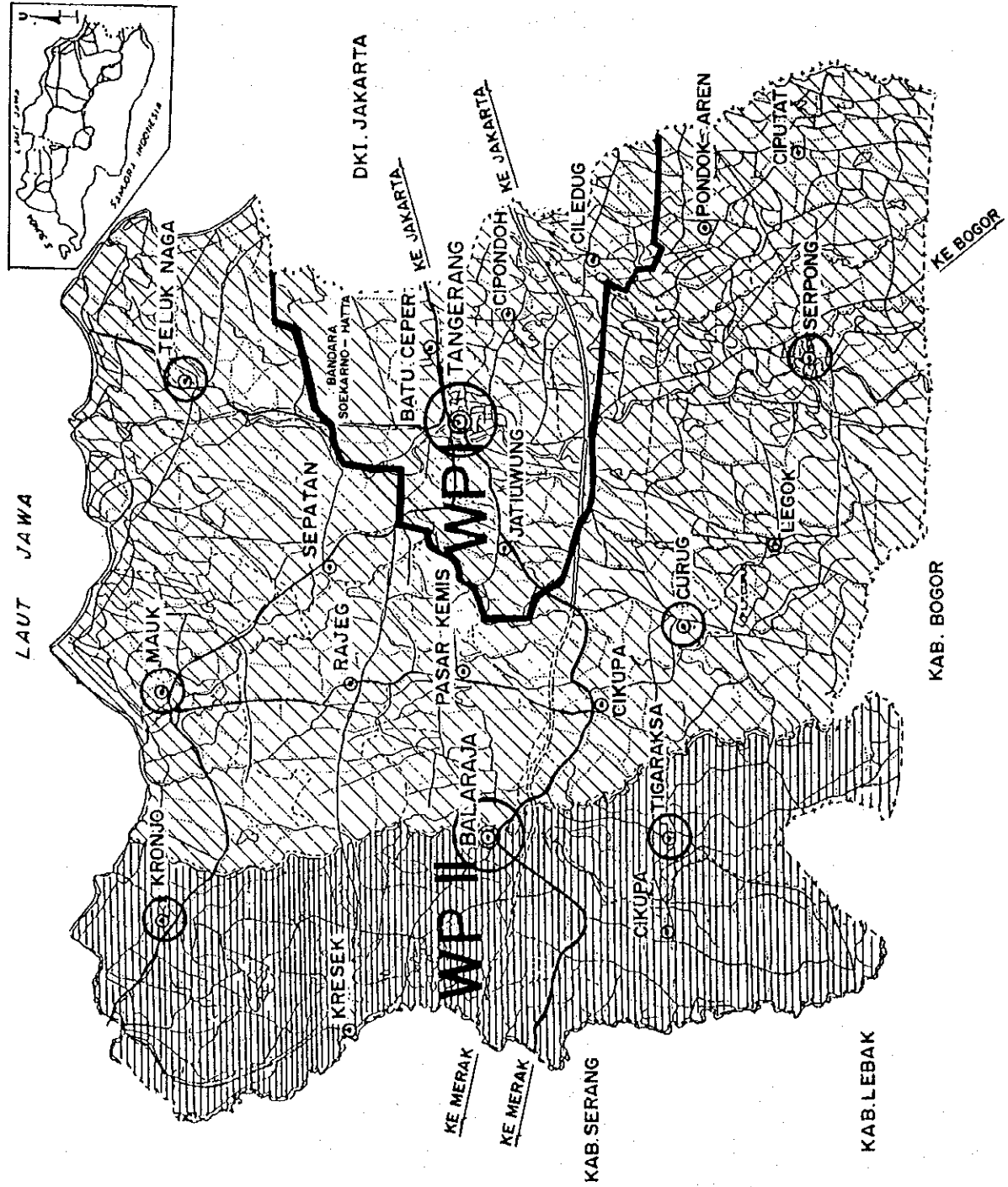
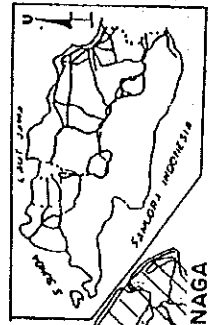
Fig. 4.3.4
SYSTEM OF DEVELOPMENT
REGIONS IN TANGERANG

Legend :

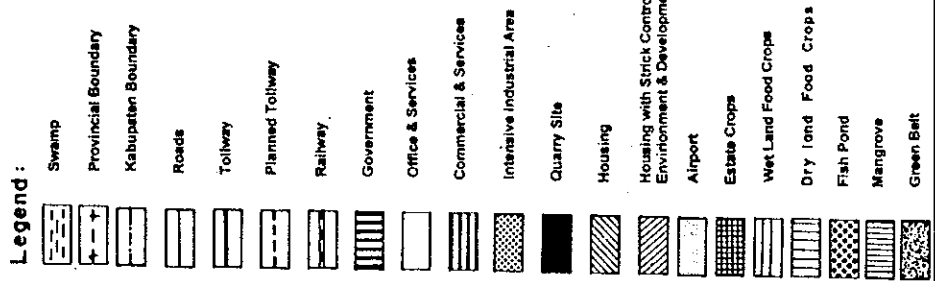
-  Kabupaten Boundary
-  Kecamatan Boundary
-  National Road
-  Provincial / Kab. Road
-  Kecamatan Capital
-  Development Region I
-  Development Region II
-  Provincial/Kab. Center
-  Regional Sub - Center



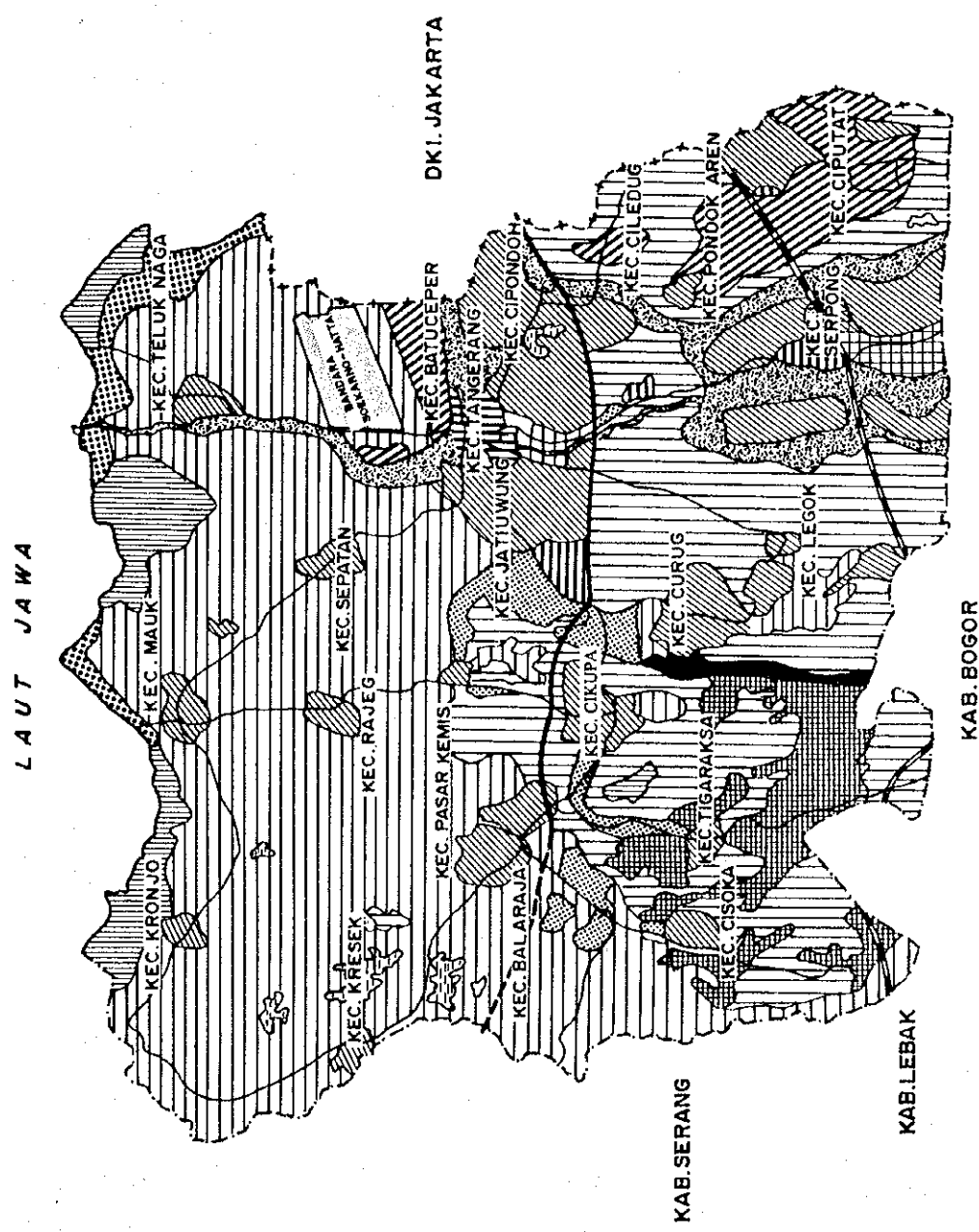
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DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA



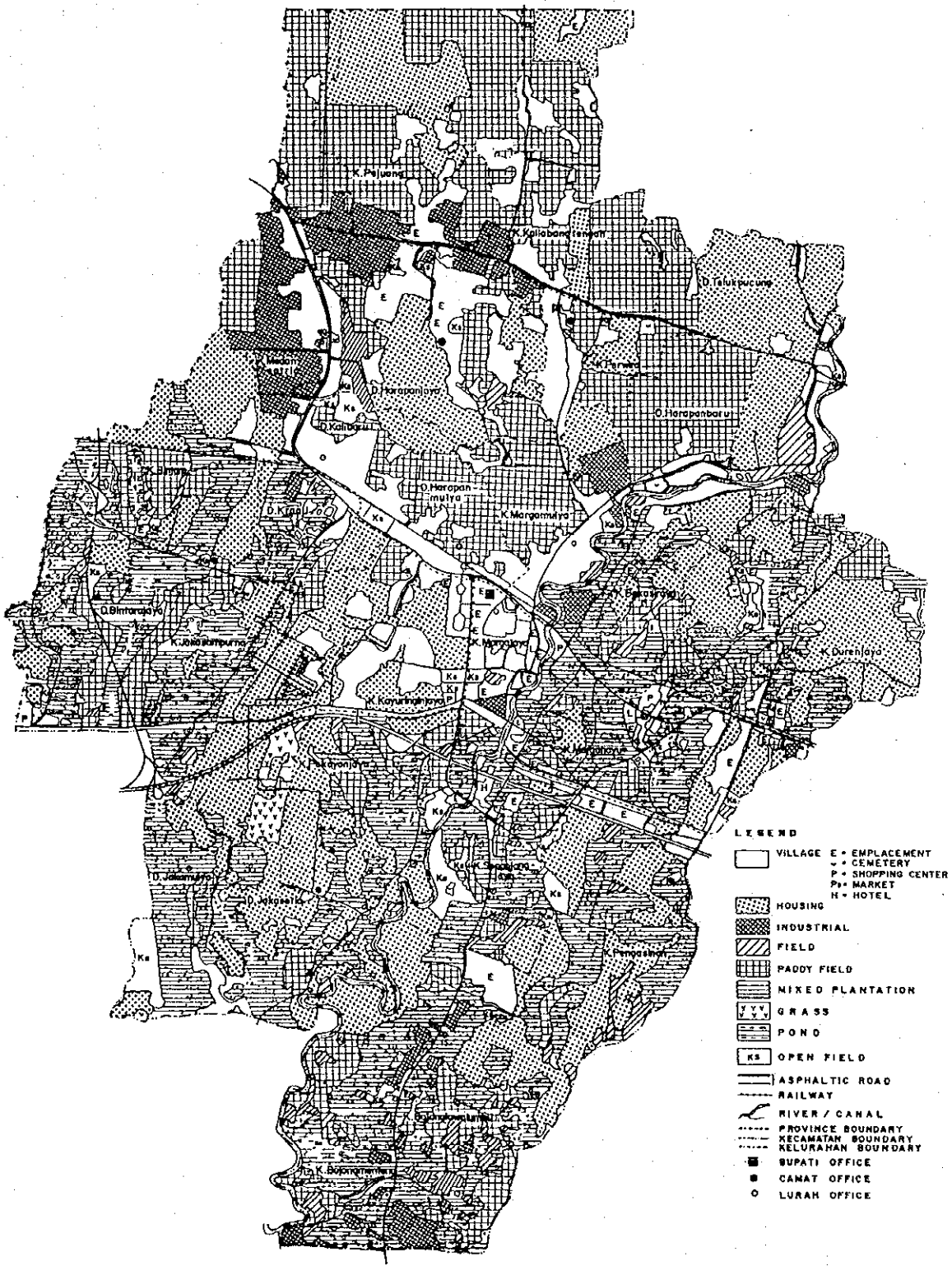
**Fig. 4.3.5
EXISTING LAND USE IN
KAB. TANGERANG**



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DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA



Source : Revisi Rencana Umum Tata Ruang Kota, Kotif Tangerang 1992-2012. Kompilasi Data 1992



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DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA**

**Fig. 4.3.6
EXISTING LAND USE IN KOTIF BEKASI**

to the north of the railway to cross the railway from north to south and inevitably meet traffic jams near the intersection with Jl. Raya Bekasi.

As shown in the Structure Plan (Fig. 4.3.7), BAPPEDA Bekasi has an intention to develop the Bekasi By-pass connecting Setu-Cibitung/Tambun-Jakarta through 3-4 kilometers north of the existing national road (Jl. Raya Bekasi). Furthermore, a large-scale industrial area/zone has been contemplated and currently realized to some extent in Cikarang/Cibitung area where the Jakarta-Cikampek Tollway runs in the middle. The planning authority of Bekasi, therefore, is proposing a new arterial road from Cikarang to Tg. Priok in order to segregate the movement of export/import products from the national road, and thus allow it to provide more capacity to passenger movements within the Jakarta Metropolitan Area.

(3) Bogor

Bogor consists of Kotamadya Bogor and Kabupaten Bogor whose capitals are located at Bogor city and Cibinong city, respectively. Kotif Depok is included in Kabupaten Bogor.

To conform to the corridor development concept, control areas of housing and industrial developments are designated as shown in Fig. 4.3.9, and they are reflected in the future structure plan (land use plan) presented in Fig. 4.3.10.

Urban functions and hierarchy of cities in Bogor are :

a) Metropolitan System

Commuter/Dormitory Cities :

- Kotif Depok
- Cimanggis
- Cibinong

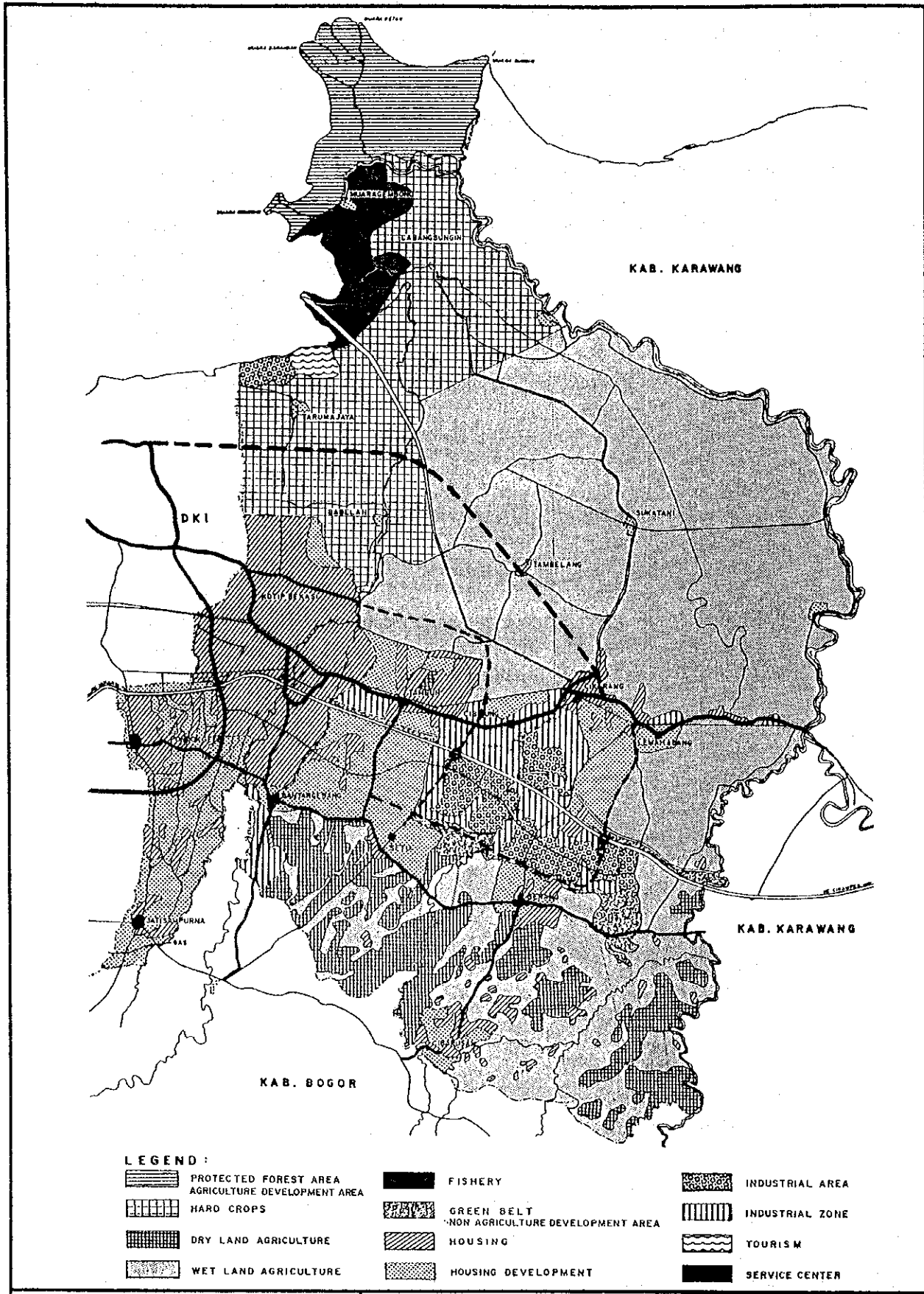
Other Cities :

- Parung
- Citeureup
- Cileungsi

b) Regional System

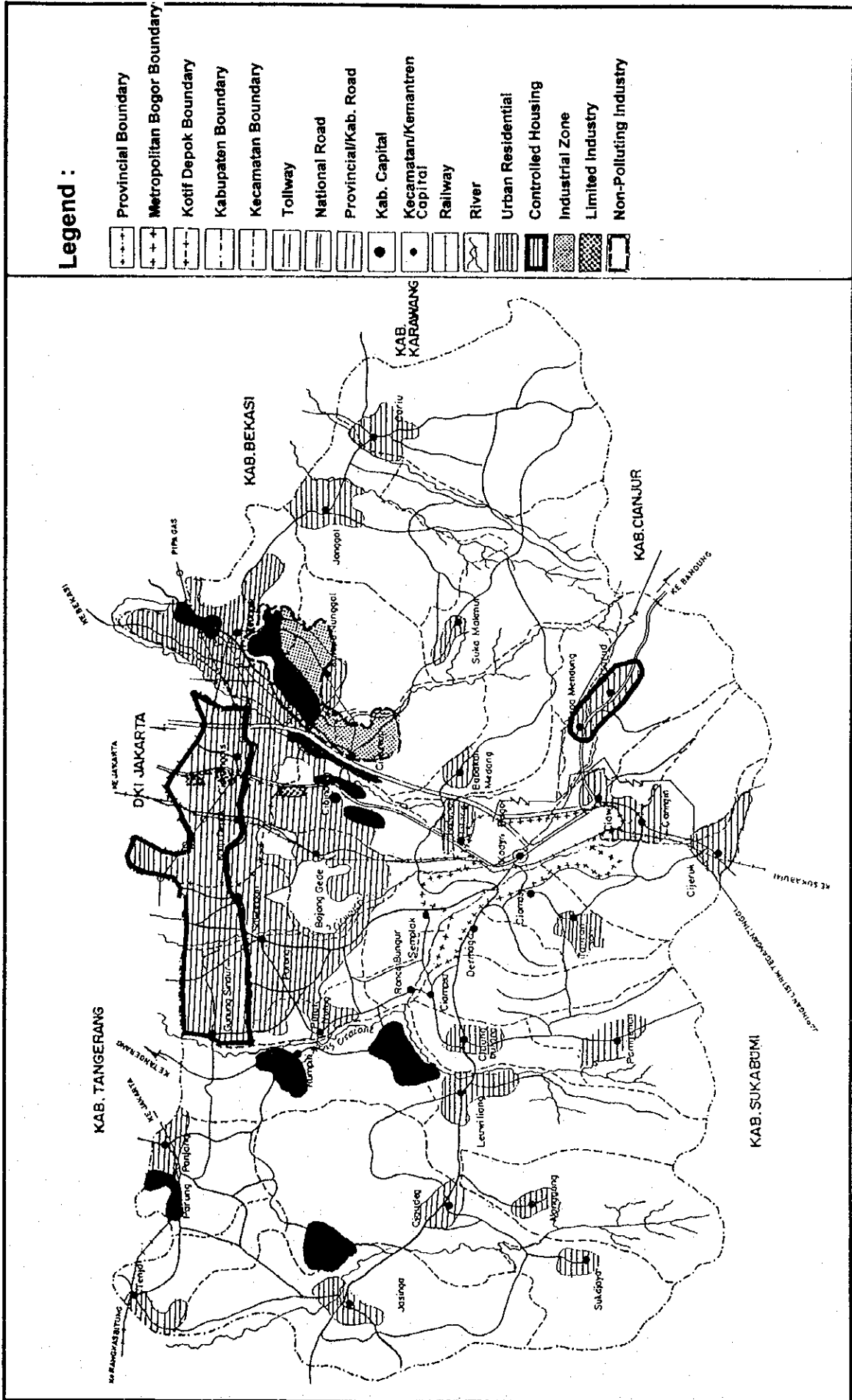
- Primary center : Jakarta
- Second center : Bogor
- Third center : Rumpin, Leuwiliang, Jonggol
- Forth center : Jasinga, Parung Panjang, Ciawi, Cariu
- Fifth center : Kecamatan capital cities

The city hierarchy and the development regions are shown in Figs. 4.3.11 and 4.3.12.



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DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA**

**Fig. 4.3.7
SPATIAL STRUCTURE PLAN OF
KABUPATEN BEKASI, YEAR 2000**



Legend :

- Provincial Boundary
- Metropolitan Bogor Boundary
- Kotif Depok Boundary
- Kabupaten Boundary
- Kecamatan Boundary
- Tollway
- National Road
- Provincial/Kab. Road
- Kab. Capital
- Kecamatan/Kemantren Capital
- Railway
- River
- Urban Residential
- Controlled Housing
- Industrial Zone
- Limited Industry
- Non-Polluting Industry

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IN JAKARTA METROPOLITAN AREA

Fig. 4.3.9 HOUSING AND INDUSTRIAL ALLOCATION PLAN IN BOGOR

Legend :

- Conservation Area :
 - Protected Forest
 - Reserved Forest
- Cultivation Area :
 - Productive Forest Area
 - Estate crops Area
 - Dry Land Food Crops Area
 - Wet Land Food Crops Area
- Non-cultivation Area :
 - Urban Housing Area
 - Industrial Area
 - Tourism Area
 - Mining Area
 - Bogor Metropolitan Area

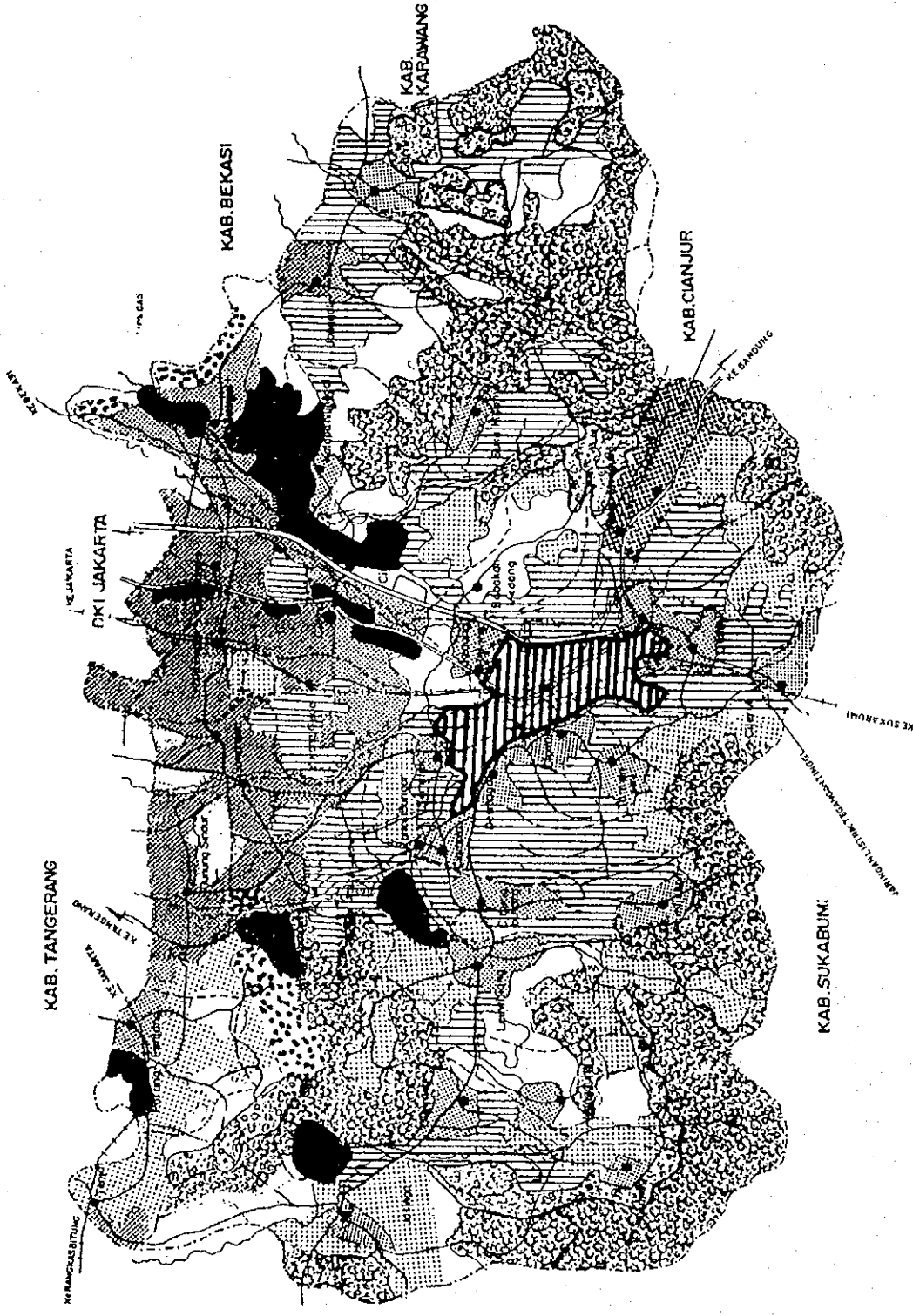





















Fig. 4.3.10 FUTURE LAND USE PLAN IN BOGOR

**FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA**

Legend :

-  Provincial Boundary
-  Metropolitan Bogor Boundary
-  Kotif Depok Boundary
-  Kab. Boundary
-  Kecamatan Boundary
-  Tollway
-  National Road
-  Provincial/Kab. Road
-  Kab./Capital
-  Kec / Kem Capital
-  Railway
-  River
-  Cities in Metropolitan System (Commuter, Dormitory Town)
-  Cities in Metropolitan System
-  First Level Center
-  Second Level Center
-  Third Level Center
-  Fourth Level Center
-  Fifth Level Center

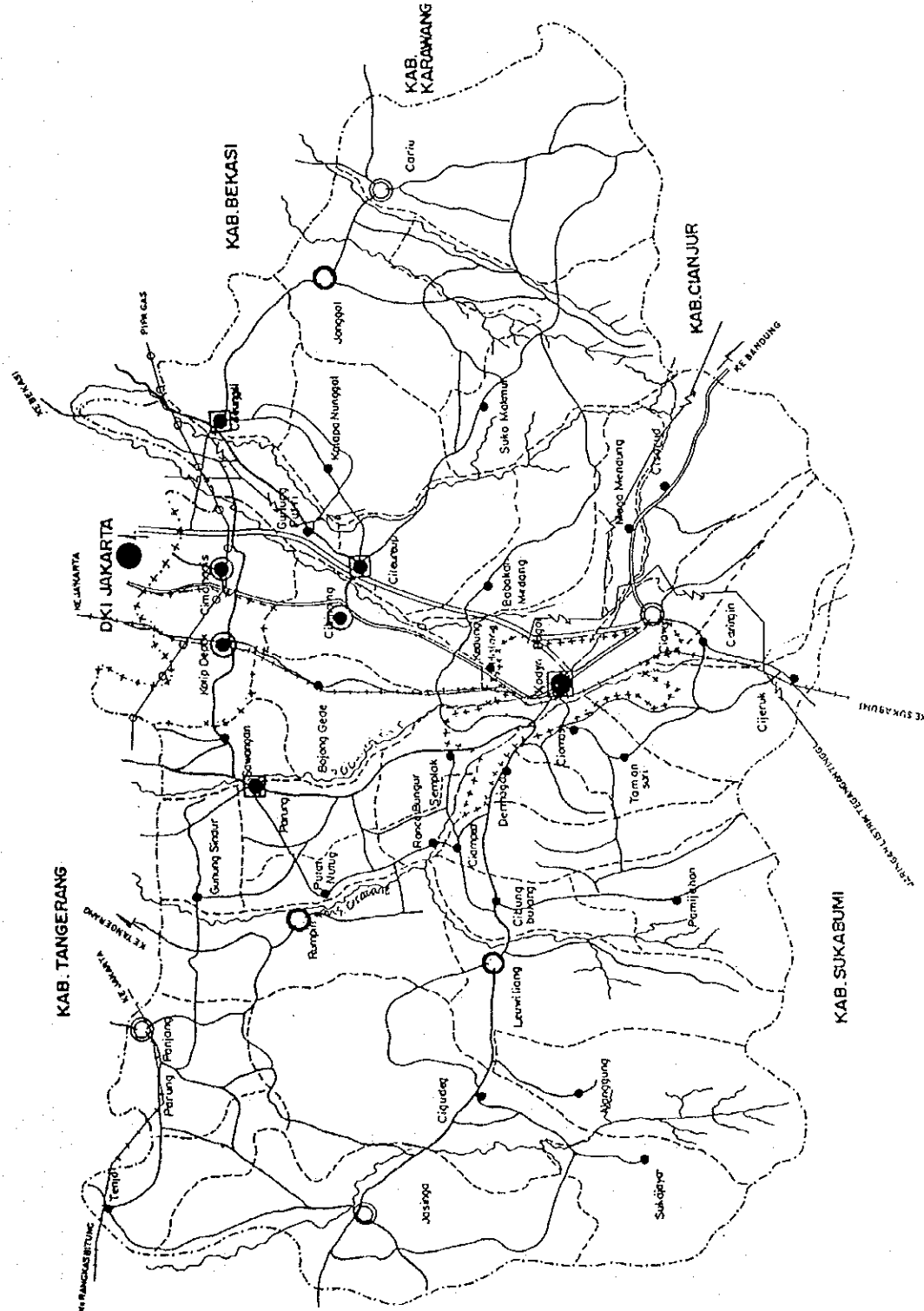


Fig. 4.3.11 CITY HIERARCHY IN BOGOR

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 IN JAKARTA METROPOLITAN AREA

4.4 Socio-economic Framework

4.4.1 Residential Population

(1) Total Population

The future population in Jabotabek has been initially forecast in the Second Planning Report and revised in the Third Planning Report of the JMDPR. According to the latest JMDPR forecast, though not finalized yet, the total population in Jabotabek is forecast to reach nearly 30 million in 2010, which averages the annual growth rate of 2.88% p.a. during 1990/2010. The population in DKI Jakarta and Botabek is estimated to be 11.2 million and 18.7 million, respectively, and which means to grow at 1.55% p.a. and 3.88% p.a.

The growth of respective Botabek components is also estimated as shown in Table 4.4.1 where the population growth in Bogor is discouraged to be 3.19% p.a. over the 20 years, which is more than 1 percent point less than those of Tangerang and Bekasi.

Table 4.4.1 Forecast Future Population in Jabotabek

Region	Year (x 1000 persons)					Average
	1990	1995	2000	2005	2010	Growth Rate (% p.a.)
DKI JKT	8,210	8,964	9,738	10,487	11,178	1.55
Botabek	8,746	11,077	13,528	16,103	18,732	3.88
Bogor	3,949	4,810	5,674	6,533	7,407	3.19
Tangerang	2,724	3,570	4,506	5,504	6,523	4.46
Bekasi	2,073	2,697	3,348	4,066	4,802	4.29
Jabotabek	16,956	20,041	23,266	26,590	29,910	2.88

Source : Third Planning Report of JMDPR, July 1993 D.G. of Cipta Karya

(2) Urban and Rural Population

The JMDPR still leaves some important planning aspect such as land use allocation in the area. For the traffic demand analysis some zonal parameters are to be estimated to within the total framework of the respective parameters. The residential population alone is not sufficient to explain a regression model of the trip generation and attraction.

Therefore, some efforts have been made to segregate agricultural employment, which is considered deeply related to the rural population, from the total employment. Further, the urban population was assumed to imply the distribution weight of industrial sectoral employments.

The JMDPR Report estimated the future urban population of designated urban agglomeration of desas, as shown in Table 4.4.2.

Table 4.4.2 JMDPR Original Urban/Rural Population in Botabek

Year	Rural Pop.	Urban Pop.	Total
1980 Census	4,111,000	1,302,000	5,413,000
1990 JMDPR (a.a.g.r* 1980/1990)	3,458,000 -1.71%	5,288,000 15.05%	8,746,000 4.91%
2000 JMDPR (a.a.g.r 1990-2000)	3,989,000 1.44%	9,539,000 6.08%	13,528,000 4.46%
2010 JMDPR (a.a.g.r 2000-2010) (a.a.g.r 1990-2010)	3,336,000 -1.77% -0.18%	15,396,000 4.90% 5.49%	18,732,000 3.31% 3.88%

Source : JMDPR Report

Note * a.a.g.r : average annual growth rate

The consequent rural population, derived from the estimated total population and urban population, in 1990 and 2000 implies the increase (1.44% p.a. over 10 years), despite the decrease in the previous (-1.171% p.a. during 1980/1990) or following (-1.77% p.a. during 2000/2010) 10 years of period.

Further, the 1990 figure of urban population in the Second Planning Report is about 394,000 persons higher than the results of 1990 population census.

Accordingly, some revisions were made as follows :

- Urban population in 1990 should be adopted from the 1990 census, since 1980 figure was derived from the 1980 census.
- Urban population growth during 1990/2000 should be revised to show a smooth decrease with reference to the previous and following decade.

Consequently, the future urban and rural population in Botabek were revised as shown in Table 4.4.3.

Table 4.4.3 Revised Urban/Rural Population in Botabek

	Rural Pop.	Urban Pop.	Total
1980 Census	4,111,000	1,302,000	5,413,000
1990 Census	3,852,000	4,894,000	8,746,000
(a.a.g.r 1980/1990)	-0.65%	14.16%	4.91%
2000 Revised JMDPR	3,590,697	9,937,303	13,528,000
(a.a.g.r 1990-2000)	-0.70%	7.34%	4.46%
2010 JMDPR	3,336,000	15,396,000	18,732,000
(a.a.g.r 2000-2010)	-0.73%	4.48%	3.31%
(a.a.g.r 1990-2010)	-0.72%	5.90%	3.88%

Source : JICA Team's estimate

The future urban and rural population in Botabek components, namely Bogor, Tangerang and Bekasi, are based on the population estimated for the urban agglomeration in the Report.

The study estimated them following the method mentioned below :

- i) Urban population in 1990 were all revised to accord with 1990 census for the respective Botabek components, and the future values are assumed to shift as the bases change.
- ii) Although population growth is derived from the net increase between urban and rural population, the revised population increment of the respective Botabek components was assumed to only bring about changes in the urban population increase.

In short, a pull-back of the initially estimated increase in Bogor's population was considered to happen to the increase of the urban population, and the pull-back volume was supplemented by the increase in Tangerang and Bekasi urban population.

- iii) Distribution of the additional increase between Tangerang and Bekasi was assessed by the proportion of initially estimated urban growth potentials of the respective regions.

Resulting urban and rural population were estimated for the respective Botabek components as shown in Table 4.4.4.

Table 4.4.4 Future Urban and Rural Population in Botabek

Region	Year (x 1000 persons)		
	1990	2000	2010
Bogor :			
Total Pop.	3,949	5,674	7,407
Urban	2,201	3,828	5,315
Rural	1,748	1,846	2,092
Tangerang :			
Total Pop.	2,724	4,506	6,523
Urban	1,521	3,496	5,767
Rural	1,203	1,010	756
Bekasi :			
Total Pop.	2,073	3,348	4,802
Urban	1,172	2,613	4,314
Rural	901	735	488
Botabek Total :			
Total Pop.	8,746	13,528	18,732
Urban	4,894	9,937	15,396
Rural	3,852	3,591	3,336

Source : JICA Team's estimate

4.4.2 Work Force

(1) Employed Population

The JMDPR analyzed, for estimating future employment levels, such factors as age structure, labor force participation ratios distinctive between male and female, and unemployment ratio.

These factors were estimated for DKI Jakarta and Botabek over 20 years from 1990 to 2010 as shown in Table 4.4.5.

Table 4.4.5 Factor Estimates for Future Employment Level

Factors Relating to Employment	Year		
	1990	2000	2010
a) Population more than 10 yrs of age (% vs total population)			
• DKI Jakarta	78.84	81.42	83.73
• Botabek	72.38	78.42	81.48
b) Economically Active Population (% vs a))			
• DKI Jakarta	48.68	53.11	55.73
• Botabek	45.89	50.21	55.47
c) 1-Unemployment Ratio (%)			
• DKI Jakarta	92.85	93.00	93.00
• Botabek	95.72	95.00	95.00
d) Compound Employment Ratio (% vs total population)			
• DKI Jakarta	35.64	40.22	43.40
• Botabek	31.79	37.41	42.94

Source : Second Planning Report of JMDPR, April 1993,
D.G. of Cipta Karya

The employed population of the respective Botabek components was estimated according to the following procedure :

- i) A target compound employment ratio (adopted in the item d) of the above Table 4.4.5) in 2010 was assumed to be the same (42.94% vs total population) commonly among the respective Botabek components.
- ii) The ratio in the intermediate year 2000 was estimated by interpolating 1990 and 2010 ratios
- iii) Based on the derived ratios above, employed levels of the respective Botabek components were estimated as shown in Table 4.4.6.

Table 4.4.6 Future Employed Population in Botabek

Region	Year (x 1000 persons)		
	1990	2000	2010
DKI Jakarta	2,926	3,917	4,851
Botabek :	2,780	5,061	8,044
Bogor	1,212	2,089	3,181
Tangerang	894	1,708	2,801
Bekasi	674	1,264	2,062
Jabotabek	5,706	8,978	12,895

Source : JICA Team's estimate

(2) Employment by Industrial Sector

The JMDPR forecast growth in employment by industrial sector for DKI Jakarta and Botabek, 1990-2010. However, the employment numbers in Botabek are different from the 1990 census result. It is presumed that the census data below provincial level were not available at that time.

Therefore, only the employment growth was adopted from the JMDPR and future employment was estimated as shown in Table 4.4.7.

Table 4.4.7 Forecast Growth in Employment by Sector, DKI Jakarta and Botabek, 1990-2010

Region, Year, Change	Industrial Sector (x 1000 persons)					
	Agriculture	Manufact.	Other ¹⁾ Industry	Trade	Other ²⁾ Services	Total
DKI Jakarta						
1990*	30.7	599.3	224.1	778.1	1,293.8	2,926.0
2010	1.7	1,063.3	387.1	1,305.1	2,093.8	4,851.0
Growth**	-29.0	+464.0	+163.0	+527.0	+800.0	+1,925.0
Botabek						
1990*	459.5	667.0	234.9	595.5	823.1	2,780.0
2010	222.5	2,870.0	586.9	1,971.5	2,393.1	8,044.0
Growth**	-237.0	+2,203.0	+352.0	+1,376.0	+1,570.0	+5,264.0
Jabotabek						
1990*	490.2	1,266.3	459.0	1,373.6	2,116.9	5,706.0
2010*	224.2	3,933.3	974.0	3,276.6	4,486.9	12,895.0
Growth**	-266.0	2,667.0	+515.0	+1,903.0	+2,370.0	+7,189.0

Note : * 1990 Census data

** Technical Report "Economy" of JMDPR, January 1993

1) Includes mining; electricity, gas and water; construction

2) Public/private services; transport; finance; other

The sectoral employment of the respective Botabek components were based on the distribution characteristics derived from the 1990 census result, growth factors of total employment in the respective Botabek components (see Table 4.4.6), and those of sectoral employment in Botabek totals (see Table 4.4.7). As the result, the future employment by industrial sector was estimated for the Botabek components as shown in Table 4.4.8.

Table 4.4.8 Forecast Employment by Sector for DKI Jakarta and Botabek Components

Year, Region	Industrial Sector (Persons)					Total
	Agriculture	Manfact.	Other Industry	Trade	Other Services	
<u>1990 Census Data</u>						
DKI Jakarta	30,700	599,300	224,100	778,100	1,293,800	2,926,000
Botabek	459,500	667,000	234,900	595,500	823,100	2,780,000
- Bogor	253,200	246,800	117,300	258,300	336,400	1,212,000
- Tangerang	104,200	276,800	75,000	176,600	261,400	894,000
- Bekasi	102,100	143,400	42,600	160,600	225,300	674,000
Jabotabek	490,200	1,266,300	459,000	1,373,600	2,116,900	5,706,000
<u>2000 :</u>						
DKI Jakarta	9,100	867,500	300,600	1,054,800	1,685,000	3,917,000
Botabek	365,400	1,551,300	426,200	1,142,500	1,575,600	5,061,000
- Bogor	159,400	631,300	187,900	473,800	636,600	2,089,000
- Tangerang	123,100	523,900	142,800	385,200	533,000	1,708,000
- Bekasi	82,900	396,100	95,500	283,500	406,000	1,264,000
Jabotabek	347,500	2,418,800	726,800	2,197,300	3,260,600	8,978,000
<u>2010</u>						
DKI Jakarta	1,700	1,063,300	387,100	1,305,100	2,093,800	4,851,000
Botabek	222,500	2,870,000	586,900	1,971,500	2,393,100	8,044,000
- Bogor	94,600	1,123,300	247,600	785,100	930,400	3,181,000
- Tangerang	79,100	996,300	205,000	685,500	835,100	2,801,000
- Bekasi	48,800	750,400	134,300	500,900	627,600	2,062,000
Jabotabek	224,200	3,933,300	974,000	3,276,600	4,486,900	12,895,000

Source : JICA Team's estimate.

(3) Number of Jobs

The number of jobs (employed population at work places) were estimated assuming that Jabotabek is a closed area namely, the employed population equals to the number of jobs in Jabotabek, and that growth of net in-commuters to Jakarta from Botabek is 500,000 persons during 1990-2010, as predicted in the JMDPR by industrial sector.

The net in-commuter population in 1993 was estimated previously in Section 2.2.2(4) to be 187,500 persons, so that those in 2000 were interpolated between 1993 and 2010 being 280,800 persons.

Directional in-commuter volumes, that is those from Bogor, Tangerang or Bekasi were only predictable from the 1993 traffic survey analysis. Based on the 1993 estimates of the directional volumes, they were assumed to grow

proportionally to the respective population growth, and eventually adjusted to the Botabek totals as summarized in Table 4.4.9.

Table 4.4.9 Forecast Net In-Commuter Population to Jakarta

Region	Year (Persons)		
	1993	2000	2010
From Bogor	70,400	99,900	117,180
From Tangerang	44,900	70,200	91,326
From Bekasi	72,200	110,700	142,618
From Botabek	187,500	280,800	500,000*

Source : JICA Team's estimate

Note * Adopted from Second Planning Report of JMDPR

Sectoral engagement of the net in-commuter population in 2010 was also analyzed by the JMDPR, so that the intermediate figures in 2000 were interpolated between those in 1993 and 2010 as presented in Table 4.4.10.

Table 4.4.10 Forecast Sectoral Engagement of Net In-Commuter Population in Botabek

Year	Industrial Sector (persons)					Total
	Agriculture	Manufac.	Other Industry	Trade	Other Services	
1993	0	7,900	2,000	104,300	73,300	187,500
2000	0	26,100	7,300	126,100	121,300	280,800
2010*	0	118,000	41,000	136,000	205,000	500,000

Source : JICA Team's estimate

Note * Second Planning Report of JMDPR

Future net in-commuter population by sector was in consequence estimated using the 1993 distribution pattern relating to both regions and sectors, and growth factors of the respective sectors and regions in Botabek.

Table 4.4.11 summarizes the future net in-commuter population, and as the result the number of jobs by industrial sector and region were derived as shown in Table 4.4.12.

Table 4.4.11 Forecast Net In-Commuter Population to Jakarta by Sector, 1990-2010

Year & Region	Industrial Sector (persons)					Total
	Agriculture	Manufac.	Other Industry	Trade	Other Services	
Year 1990 :						
Bogor	0	1,600	300	23,300	15,600	40,800
Tangerang	0	600	100	17,000	9,100	26,800
Bekasi	0	1,600	400	20,500	14,300	36,800
Botabek Total	0	3,800	800	60,800	39,000	104,400
Year 2000 :						
Bogor	0	9,700	2,800	44,400	43,000	99,900
Tangerang	0	5,300	1,300	32,700	30,900	70,200
Bekasi	0	11,100	3,200	49,000	47,400	110,700
Botabek Total	0	26,100	7,300	126,100	121,300	280,800
Year 2010						
Bogor	0	40,900	14,400	43,900	67,700	166,900
Tangerang	0	27,400	8,200	37,900	56,500	130,000
Bekasi	0	49,700	18,400	54,200	80,800	203,100
Botabek Total	0	118,000	41,000	136,000	205,000	500,000

Source : JICA Team's estimate

Table 4.4.12 Forecast Future Number of Jobs by Sector in Jabotabek, 1990-2010

Year & Region	Industrial Sector (persons)					Total
	Agriculture	Manufac.	Other Industry	Trade	Other Services	
Year 1990 :						
DKI Jakarta	30,700	603,100	224,900	838,900	1,332,800	3,030,400
Botabek	459,500	663,200	234,100	534,700	784,100	2,675,600
Bogor	253,200	245,200	117,000	235,000	320,800	1,171,200
Tangerang	104,200	276,200	74,900	159,600	252,300	867,200
Bekasi	102,100	141,800	42,200	140,100	211,000	637,200
Jabotabek	490,200	1,266,300	459,000	1,373,600	2,116,900	5,706,000
Year 2000 :						
DKI Jakarta	9,100	893,600	307,900	1,180,900	1,806,300	4,197,800
Botabek	365,400	1,525,200	418,900	1,016,400	1,454,300	4,780,200
Bogor	159,400	621,600	185,100	429,400	593,600	1,989,100
Tangerang	123,100	518,600	141,500	352,500	502,100	1,637,800
Bekasi	82,900	385,000	92,300	234,500	358,600	1,153,300
Jabotabek	374,500	2,418,800	726,800	2,197,300	3,260,600	8,978,000
Year 2010						
DKI Jakarta	1,700	1,181,300	428,100	1,441,100	2,298,800	5,351,000
Botabek	222,500	2,752,000	545,900	1,835,500	2,188,100	7,544,000
Bogor	94,600	1,082,400	233,200	741,200	862,700	3,014,100
Tangerang	79,100	968,900	196,800	647,600	778,600	2,671,000
Bekasi	48,800	700,700	115,900	446,700	546,800	1,858,900
Jabotabek	224,200	3,933,300	974,000	3,276,600	4,486,900	12,895,000

Source : JICA Team's estimate

4.4.3 Future Vehicle Ownership and GRDP Projection

(1) Present Vehicle Registration

According to the historical data of vehicle registration, there exists discontinuity of data between 1987 and 1988. Many of the provincial data discloses sudden drops between these two years. Therefore, only the data since 1988 was used to analyze historical trends of vehicle registration, and to compare with different provinces.

The number of registered vehicles in Indonesia grew from approximately 7.77 million in 1988 to 8.89 million in 1990, Java accounting for some two-thirds of total registrations. DKI Jakarta, in turn, contained some 30 percent of the total vehicles registered in Java or about 20 percent of the national total.

Motorcycles represent the largest component of vehicle registrations accounting for 49 percent and 60 percent of 1990 registrations in DKI Jakarta and West Java Province respectively. Passenger vehicles had the highest representation in DKI Jakarta (about one third of total registrations), while trucks and buses combined comprise 22 percent of registered vehicles, as shown in Table 4.4.13.

Vehicle ownership (registration) in DKI Jakarta, 1990 was markedly higher than other areas, being ownership ratios of 1990, 97.7 motorcycles/1000 people, 59.0 passenger vehicles/1000 people, 20.5 buses/1000 people and 23.1 trucks/1000 people. The composite DKI Jakarta total (200.4 vehicles/1000 people) exceeded West Java Province (23.9 vehicles/1000 people) by a factor of more than eight, and national totals (49.6 vehicles/1000 people) by a factor of almost four.

Buses exhibited the highest rate of growth during the 1988-1990 period (particularly in DKI Jakarta), largely due to the rapid expansion of the small-vehicle fleet. Recently, passenger vehicle registrations exhibited a higher growth rate than motorcycle registrations, although this difference was less pronounced in West Java Province.

Table 4.4.13 Vehicle Registration by Type and Per Capita Ownership

Item	Vehicle Registration (x 1000)		Annual % Change	Veh. Comp. %		Vehicles/ 1000 pop. (1990)
	1988	1990		1988	1990	
DKI Jakarta : (Population in 1990 is 8,228 thousand)						
Motorcycle	735.7	804.2	4.55	51	49	97.7
Passenger Vehicle	398.9	485.8	10.37	28	29	59.0
Bus	136.9	169.0	11.14	10	10	20.5
Truck	164.3	190.0	7.52	11	12	23.1
Total	1,435.8	1,649.0	7.17	100	100	200.4
West Java : (Population in 1990 is 35,381 thousand)						
Motorcycle	462.4	506.5	4.66	61	60	14.3
Passenger Vehicle	148.7	170.9	7.19	19	20	4.8
Bus	40.6	49.3	10.25	5	6	1.4
Truck	111.3	120.6	4.08	15	14	3.4
Total	763.0	847.3	5.38	100	100	23.9
Indonesia : (Population in 1990 is 179,248 thousand)						
Motorcycle	5,419.5	6,083.0	5.94	70	68	33.9
Passenger Vehicle	1,073.1	1,313.2	10.62	14	15	7.3
Bus	385.7	468.6	10.21	5	5	2.6
Truck	892.6	1,024.3	7.12	11	12	5.7
Total	7,770.9	8,889.1	6.95	100	100	49.6

Source : Statistical Year Book of Indonesia, 1991.

(2) Regression Analysis of Vehicle Registration

As to DKI Jakarta, a historical trends of the vehicle registration appears to be normal without any drastic drop in data between 1987 and 1988. Therefore, it was intended to carry out the regression analysis in order to estimate a future vehicle registration using some socio-economic variables, such as population and GRDP. Data used are summarized in Table 4.4.14.

Consequently, regression equations were estimated for the respective vehicle types as shown below:

Motorcycle

$$Y = 0.218 X + 426.219 \quad (Y: \text{Motorcycles x 1000})$$

$$(t=6.113) \quad (t=8.309) \quad (X: \text{Per Capita GRDP x 1000 Rp at 1983 constant price})$$

$$R^2=0.903$$

Passenger Vehicle

$$Y = 0.316 X - 52.966 \quad (Y: \text{Passenger Vehicles x 1000})$$

$$(t=9.748) \quad (t=-1.136) \quad (X: \text{Per Capita GRDP x 1000 Rp at 1983 constant price})$$

$$R^2=0.960$$

Bus

$$Y = 0.014 X - 24.609 \quad (Y: \text{Motorcycles x 1000})$$

$$(t=16.129) \quad (t=-2.506) \quad (X: \text{GRDP x Bil. Rp. at 1983 constant price})$$

$$R^2=0.985$$

Truck

$$Y = 0.218 X + 426.219 \quad (Y: \text{Motorcycles x 1000})$$

$$(t=7.701) \quad (t=6.914) \quad (X: \text{GRDP x Bil. Rp. at 1983 constant price})$$

$$R^2=0.937$$

Table 4.4.14 Vehicle Registration and Socio-Economic Variables

Items	1985	1986	1987	1988	1989	1990
(1) Vehicle Registration (x 1000)						
Motorcycle	696.4	713.6	720.8	735.7	757.4	804.2
Passenger Vehicle	338.8	356.8	379.1	398.9	434.7	485.8
Bus	98.5	113.3	124.8	136.9	150.1	169.0
Truck	149.9	155.2	159.7	164.3	173.2	190.0
Total	1,283.6	1,338.9	1,384.4	1,435.8	1,515.4	1,649.0
(2) Population* (mid-Year x 1000)	7,302.4	7,478.8	7,659.5	7,844.5	8,033.9	8,228.0
(3) GRDP (Bil. Rp. at 1983 constant price)	9,012.7	9,444.6	10,757.8	11,469.2	12,586.1	13,681.1
(4) Per Capita GRDP (x 1000 Rp. at 1983 constant price)	1,234.2	1,262.8	1,404.5	1,462.1	1,566.6	1,662.7

Source : Jakarta in Figures 1992, Jakarta Statistical Office

Note * : Assumed to grow at the average annual growth rate derived between 1980 and 1990 Census.

(3) Future GRDP Projection and Vehicle Ownership

A vehicle ownership model was based on the regression analysis with such socio-economic parameters as per capita GRDP for passenger vehicle and motorcycle, total GRDP for truck and bus.

A future GRDP has been projected in the DKI Jakarta Structure Plan 2005 as shown in Table 4.4.15.

Table 4.4.15 Projected Future GRDP and GRDP Per Capita in DKI Jakarta

Socio-economic Parameters	Average Annual Growth Rate (% p.a.)		
	1980-1985	1985-1995	1995-2005
Projected GRDP Growth	9%	8%	7%
Projected Population Growth	3.3%	2.7%	1.9%
Projected Per Capita GRDP	5.5%	5.2%	5.0%
Actual GRDP Growth (1980-1990)	9.5%		-
Actual Population Growth (1990-1990)	2.4%		-
Actual Per Capita GRDP (1980-1990)	6.9%		

Source : DKI Jakarta Structure Plan 2005

Statistical Year Book of Indonesia, 1987, 1990 & 1992

The GRDP growth in DKI Jakarta has been achieved at 9.5% p.a., which was a little higher rate than projected. Since the population had grown slower than projected, the per capita GRDP could attain a higher rate of growth being 6.9% p.a. over the period during 1980-1990, which was about 1.5% point higher than the projected value.

Based on the above comparative analysis, and the related planning study such as JMDPR, the future GRDP in DKI Jakarta was assumed as shown in Table 4.4.16.

Table 4.4.16 Future GRDP and Per Capita GRDP in DKI Jakarta

Socio-economic Parameters	Average Annual Growth Rate		
	1980-1990	1990-2000	2000-2010
Population Projection*	2.4%	1.7%	1.4%
GRDP Projection	9.5%	8.5%	7.5%
GRDP Per Capita Projection	6.9%	6.7%	6.0%

Socio-economic Parameters	1990	2000	2010
Population (Million)	8,210	9,738	11,178
GRDP** Projection (Billion Rp.)	13,681	30,933	63,753
GRDP Per Capita (x 1000 Rp.)	1,666	3,177	5,703

Source : JICA Team's estimate

Notes : * JMDPR Projection (Third Planning Report)

** at 1983 constant price

The above future socio-economic parameters were applied to the regression equations to estimate future vehicle registrations, and the result was obtained as summarized in Table 4.4.17.

Table 4.4.17 Estimated Future Vehicle Ownership in DKI Jakarta

Vehicle Type	Year (x 1000)			Growth Rate Per Annum	
	19990	2000	2010	1990/2000	2000/2010
Motorcycle	804.2	1,118.8	1,669.5	3.4%	4.1%
Passenger Vehicle	485.8	951.0	1,749.2	6.9%	6.3%
Bus	169.0	408.5	867.9	9.2%	7.8%
Truck	190.0	326.1	588.7	5.6%	6.1%
Total	1,649.0	2,804.4	4,875.3	5.5%	5.7%

Source : JICA Team's estimate

**CHAPTER 5 EXISTING ROAD AND TRANSPORT
DEVELOPMENT PLAN**

THE UNIVERSITY OF CHICAGO
PHILOSOPHY

CHAPTER 5 EXISTING ROAD AND TRANSPORT DEVELOPMENT PLAN

5.1 Review of Proposed Road Network Plans

Two governmental agencies, DKI Jakarta and Ministry of Public Works, are responsible for roads in the study area. Each agency has developed an individual road network plan as far as their jurisdiction is concerned. The following four road network plans presently govern as derived from its background;

- a) Road network plan prepared by Dinas Tata Kota, DKI Jakarta (Fig. 5.1.1)
- b) Road network plan prepared by Bina Marga, Ministry of Public Works (Fig. 5.1.2)
- c) Road network plan tentatively proposed by JMDPR, Ciputa Karya, Ministry of Public Works (Fig. 5.1.3)
- d) Transportation network plan proposed by ARSDS, Bina Marga, Ministry of Public Works (Fig. 5.1.4)

The road network plan prepared by Dinas Tata Kota, DKI Jakarta is that it is prepared for the purpose of realizing the structure plan of Jakarta 2005. The road network plan contains number of new links and road improvement, indicating future R.O.W, location of flyovers/underpasses and number of lanes. RBWK is prepared in principle based on this road network. However, this road network plan is still subject to appropriation of funds and time to time version. On the other hand, the road network plan prepared by Bina Marga, Ministry of Public Works is of adhoc basis. In compliance with the Decree of the Minister, Ministry of Public Works in 1991, National roads in DKI Jakarta have varied from previous seven (7) roads to the following six (6) links;

- Jl. Daan Mogot
- Jl. Bekasi Raya - Jl. Perintis Kemerdekaan
- Jl. Sutoyo and Jl. Raya Bogor
- Jl. Pluit Selatan, Cilincing and Jampea
- Inner Ring Road (Jl. S. Parman, Jl. G. Subroto, Jl. MT. Haryono, Jl. D.I. Panjaitan, Jl. A. Yani and Jl. Yos Sudarso)
- Jakarta Outer Ring Road, Jl. Cakung-Cilincing and Jl. Pondok Gede - Jl. Jati Asih - Bekasi

Furthermore, to cope with chronic traffic congestion in DKI Jakarta, Bina Marga/RBO-IX intensively improve the road network in Jakarta in cooperation with DPU. Their major targets are to improve three circumferential roads and two east-westward arterial roads in the south of Monas. They are as follows;

- a) Improvement of inner loop, consisting of Jl. Mangga Dua, Pasar Pagi Flyover, Jl. Moh. Mansyur, Jl. Cideng, Jl. Mas Mansyur, Jl. Casablanca, Jl. Matraman Raya and the north-southward arterial road at ex-Kemayoran Airport.
- b) Improvement of east-westward arterial roads, comprising Jl. Ciledug Raya, Sympruk Bypass, Jl. Penjernihan, Jl. Sultan Agung, Jl. Tambak, Jl. Pramuka and Jl. Pemuda.
- c) Improvement of another east-westward arterial roads along Eastern Banjir Kanal.

Almost all the development of toll road in Jakarta - West Java Tollway System are planned to be implemented by BOT scheme. Only Pluit - Jembatan Tiga expressway and the Northern Extension of S-W Arc are scheduled to be constructed by the scheme of bilateral economic cooperation.

The road network plan tentatively proposed by JMDPR was presented in their second planning report as shown in Fig. 5.1.3. However, the third planning report contained only schematic figure as shown in Fig. 4.1.8. This schematic figure has the similar concept of tollway network to that in the second planning report and proposes two east-westward radial tollways in both East and West Axes, one north-southward radial tollway and three circumferential tollways in Jabotabek, including existing tollways.

The transportation network plan proposed by ARSDS is the basis of this study, proposing two east-westward transport corridors which are of road cum public transport means. Presently, LRT network is proposed in its own corridors as described in the sub-section of 6.2.2.

There are two governmental agencies responsible for implementing public road projects in Jabotabek, namely Directorate General of Highways (Bina Marga) under Ministry of Public Works and Dinas Pekerjaan Umum (DPU) under DKI Jakarta. Bina Marga undertakes mainly development and maintenance of Primary Arterial Roads and Primary Collector Roads, while DPU undertakes development and maintenance of Secondary Road Network in Jakarta. On the other hand, Toll Roads are developed and maintained by Jasa Marga that is a state-owned enterprise responsible for implementing toll roads and is technically controlled by Ministry of Public Works.

In Jakarta, Bina Marga and DPU and jointly and severally implementing road projects according to financial sources of development fund appropriated by international lending agencies. JUDP-I (Jabotabek Urban Development Program Phase-I) financed by IBRD is being implemented by Bina Marga and DPU construction and improvement of arterial and collector roads including construction of grade separation structures as shown in Fig. 5.1.5 and Table 5.1.1. However, OECF financed projects are solely being implemented by Bina Marga as shown in Fig. 5.1.5. As for tollway development, on-going and forthcoming projects are mainly developed by BOT scheme. In Pelita-VI (1994/1995 - 1998/1999), both agencies tentatively intend to develop roads as shown in Figs. 5.1.6 through 5.1.8.

**Table 5.1.1 PROJECT COMPONENT
OF
JABOTABEK URBAN DEVELOPMENT PROJECT PHASE - I (JUDP-I)
AND
INTRA URBAN EXPRESSWAY AND RELATED FACILITIES PROJECT (OECF)**

NO	DESCRIPTION	REMARKS
A.	JUDP-I	
I.	MAJOR ARTERIAL ROADS	
1.	Outer Ring Road West (frontage roads)	
2.	Outer Ring Road South (Frontage roads)	
II.	SECONDARY ARTERIAL ROADS	
3.	Buncit - Outer Ring Road	
4.	Pondok Pinang - Pejompongan	
5.	Pasar Minggu - Depok	: Pasar Pagi Canal Bridges, Pasar Pagi Viaduct
6.	Pasar Pagi Viaduct	: Jatinegara - Sahardjo, Sahardjo - Rasuna Said, Rasuna Said - Sudirman
7.	Tembus Jatinegara - Sudirman (partial)	: Pejompongan - Sudirman, Dukuh Atas Underpass (constructed by Developer)
8.	Pejompongan - Matraman (partial)	: Sudirman - Manggarai, Manggarai - Matraman Sudirman - Manggarai, Manggarai - Matraman
30.	Pasar Minggu - Pejaten	
III.	MAJOR INTERSECTIONS/FLYOVERS	
9.	Harmoni Flyover (cancelled)	
10.	Senen Flyover	
11.	Manggarai Connection	
12.	Pramuka - Matraman Flyover	
31.	Sudirman Flyover	
32.	Kebayoran Lama Flyover	
33.	Kampung Melayu Flyover	
34.	Putri Hijau Flyover	
35.	Pasar Minggu Flyover	
IV.	EASTERN AREAS DEVELOPMENT	
13.	Route CC/FF	: D.I. Panjaitan - Cipinang Besar, Cipinang Besar - Pahlawan Revolusi, Pahlawan Revolusi - Route EE
14.	Route EE	: Buaran - Inspeksi Tarum Barat
	WESTERN AREAS DEVELOPMENT	
16.	Route B	: Jalan Meruya Ilir
17.	Route D	: Daan Mogot - Kedoya, Kedoya - Kebon Jeruk, Kebon Jeruk - Pos Pengumben, Pos Pengumben - Permata Hijau
18.	Route E	: Puri Kembangan - Meruya Ilir
19.	Kebon Jeruk Access Road	
20.	Route F and H	
V.	TRAFFIC MANAGEMENT PROJECTS	
21.	Kebayoran Lama	: Jalan Kramat, Jalan Jamblang, Jalan Bungur
22.	Tanah Abang Traffic Management Scheme	: Jalan Fachrudin - Cideng/Jatibaru
23.	Tugu Tani	: Tugu Tani Junction
24.	Jalan Rasuna Said - Jalan Diponegoro	: Diponegoro/Cik Ditiro Junction
25.	Jalan Otista- Jalan Dewi Sartika- Jalan Raya Bogor	: Jalan Otista - Jalan Dewi Sartika, Jalan Raya Bogor Corridor Improvement
26.	Jalan Gunung Sahari - Jalan Jatinegara	: Bus Lane Gunung Sahari - Jatinegara
27.	Jalan Kyai Tapa - Jalan Hasyim Ashari	: Bus Lane Gunung Sahari - Jatinegara
28.	Jalan Kramat Bunder - Jalan Letjen Suprpto	: Bus Lane Kramat Bunder - Suprpto
VI.	GUIDED LAND DEVELOPMENT	
29.	Kemayoran Airport Site Development (Cancelled)	: Ex-Kemayoran Airport Site
B.	OECF	
30.	Anggrek Nelimumi Flyover	
31.	Kebon Jeruk Flyover	
32.	Tomang - Grogol Highway	
33.	Pluit - Jembatan Tiga Expressway	
34.	Mampang Flyover	
35.	Kapten Tendean Flyover	
36.	Kemayoran Access Road	
37.	Forth Coming Northern Extension of South West Arc.	

Table 5.1.2 IMPLEMENTATION TIME SCHEDULE (PELITA VI)

No.	Description	Remarks
A.	Bekasi - Meruya Ilir Link	
1.	New Construction	
	1) Senen Flyover	G - 1
	2) Tugu Tani Flyover/Underpass	G - 2
	3) Jatibaru/Cideng Flyover	G - 3
	4) KS. Tubun - Jatibaru Flyover	G - 4
2.	Improvement	
	1) Lapangan Tembak Flyover	G - 5
	2) Jalan Lapangan Tembak - KS Tubun	W - 1
	3) Jl. Tembus S. Parman - Kebon Jeruk Batu Sari	W - 2
	4) Jl. Tanah Tinggi Barat/Timur (Widening)	W - 3
	5) Jl. Angkasa - Samanhudi Flyover	G - 6
	6) Jl. Toll Jakarta-Merak (From Sentra Primer-Kedoya Al Kamal)	W - 4
	7) Jl. Toll Jakarta-Merak (From S. Parman-Perjuangan Lanjut)	W - 5
	8) Jl. Kampung Ambon (Widening)	W - 6
	9) Jl. Pegambiran (Widening)	W - 7
	10) Jl. Pahlawan Revolusi - I. Gusti Ngurah Rai (Widening)	W - 8
	11) Jl. Mangga Besar/From Railway-Gunung Sahari (Widening)	W - 9
	12) Jl. Bangka I (Widening)	W - 10
	13) Jl. Pancoran - Pasar Minggu (Widening)	W - 11
	14) Jl. Fatmawati (Widening)	W - 12
	15) Jl. Saharjo - Minangkabau (Widening)	W - 13
	16) Jl. Inspeksi Kali Sekretaris	W - 14
B.	Cileduk Raya - Bekasi Raya Link	
1.	New Construction	
	1) Karet Flyover	G - 7
	2) Pramuka Matraman Flyover Phase II	G - 8
	3) Salemba - Diponegoro Underpass	G - 9
2.	Improvement	
	1) Jl. Cirendeui	W - 15
	2) Jl. Kendal Terusan	W - 16
	3) Jl. Saharjo - Minangkabau (Widening)	W - 17
	4) Jl. Joglo Raya (From Srengseng - Batas Kota)	W - 18
	5) Jl. Panjang - Cidodol (Widening)	W - 19

No.	Description	Remarks
6)	Jl. Deplu Bintaro (Widening)	W - 20
7)	Jl. Seskoal - Tanah Kusir (Widening)	W - 21
8)	Jl. Swadarma (Widening)	W - 22
9)	Jl. Tanah Merdeka (Widening)	W - 23
10)	Jl. RS. Veteran Bintaro (Widening)	W - 24
11)	Jl. Kelapa Dua (Widening)	W - 25
12)	Jl. Rel KA Bintaro Jaya	W - 26
13)	Jl. Limo (Widening)	W - 27
14)	Jl. Bintaro Permai (Widening)	W - 28
15)	Jl. Pondok Gede (Widening)	W - 29
	C. Pondok Kopi - Pasar Pagi Link	
	1. New Construction	
1)	Penggilingan Flyover	G - 10
2)	Pahlawan Revolusi Flyover	G - 11
3)	Panjaitan Underpass	G - 12
4)	Kampung Melayu Flyover	G - 13
5)	Lapangan Roos Flyover	G - 14
6)	Fachrudin Under Pass	G - 15
7)	Pasar Pagi Extension Flyover	G - 16
8)	Route EE Flyover	G - 17
9)	Jl. Moch. Mansyur - Cideng	W - 30
10)	Jl. Mas Mansyur (Railway - Kebon Jati)	W - 31
11)	Route CC/FF Phase II	W - 32
12)	Jembatan Kali Buaran	W - 33
13)	Jembatan Jati Kramat	W - 34
	2. Improvement	
1)	Jl. Raya Penggilingan - Bekasi Raya	W - 35
2)	Jl. Raya Penggilingan - Kranji	W - 36
3)	Route BB (Bekasi Timur - Penggilingan)	W - 37
4)	Route EE	W - 38
5)	Klender - Kranji	W - 39
6)	Pahlawan Revolusi - Klender - Kali Malang	W - 40
7)	Jatiwaringin Flyover	G - 18
8)	Jl. Asem Baris	W - 41
9)	Jl. Latumeten - Gajah Mada	W - 42
10)	Jl. Tembus Pondok Bambu - Buaran	W - 43
11)	Jl. Rel KA (Jl. Duri - Daan Mogot Pesing)	W - 44
12)	Jl. Pulo Gebang (Widening)	W - 45
13)	Jl. Rel KA (Jl. Daan Mogot Pesing - ORR)	W - 46

**ROAD DEVELOPMENT PROGRAM
JABOTABEK
1993/1994 - 1998/1999**

No.	Description	Status	Remarks
A.	Inner Ring Roads		
1.	Tomang-Grogol	Major Arterial Road	OECF Tomang-Grogol (Widening) Simpang Grogol (Improvement)
2.	Suprpto FO	Major Arterial Road	APBN Between Jl. A.Yani-Jl. Perintis Kemerdekaan (Fly Pass Arteri Non Toll)
3.	Mampang FO	Major Arterial Road	OECF Between Jl. Buncit Raya - Jl.Gatot Subroto
4.	Tendean FO	Major Collector Road	OECF Between Jl. Tendean - Jl.Gatot Subroto
5.	Pemuda-Pramuka FO/Underpass	Major Arterial Road Major Collector Road	APBN Between Jl.Tendean - Jl. Gatot Subroto
6.	Grogol-Jelambar	Toll Road	OECF Grogol-Jelambar (Widening) Toll Flyover
7.	Jelambar-Pluit	Toll Road	OECF Jelambar-Pluit Toll Road
8.	Grogol FO	Toll Road	OECF Cross Grogol Intersection
A.	Inner Ring Roads		
9.	Jl. Lingkar Barat	Major Arterial Road	APBN Jl. Outer Ring Road West (Rawa Buaya) (New Construction)
10.	Jl. Lingkar Selatan	Major Arterial Road	APBN Jl. Outer Ring Road South (Lebak Bulus) (Improvement and New Construction)
11.	Jl. Lingkar Timur	Major Arterial Road	APBN Jl. Outer Ring Road East (Pulo Gebang) (New Construction)
12.	Cakung-Cilincing	Major Arterial Road	APBN Jl. Outer Ring Road East/From Cakung-Cilincing (New Construction)

No.	Description	Status	Remarks
13.	Tanjung Barat FO	Major Arterial Road	APBN + IBRD Cross the Rail Way (Depok Line)
14.	Jagorawi FO	Major Arterial Road	APBN Outer Ring Road South Cross Jagorawi Toll Road (Pasar Rebo)
15.	Pondok Gede - Taman Mini	Major Arterial Road	APBN Jl. Pondok Gede Raya (Widening)
16.	Kebon Jeruk Access	Major Arterial Road	IBRD Jakarta-Tangerang Toll Road Access (Meruya)
17.	Kebon Jeruk FO	Major Arterial Road	OECF Cross the Tangerang Toll Road (Meruya)
18.	Lingkar Barat/ Daan Mogor FO	Major Arterial Road	APBN + IBRD Cross the Cilandak Raya Road
19.	Rawa Buaya FO	Major Arterial Road	APBN + IBRD Cross the Tangerang Line Rail Way
20.	Raya Bogor FO	Major Arterial Road	APBN + IBRD Cross the Cilandak Raya Road
21.	Kembangan Access	Major Arterial Road	APBN + IBRD Jakarta-Tangerang Toll Road Access
22.	Kembangan FO	Major Arterial Road	APBN + IBRD
C.	North Ring Roads		
23.	Kemayoran North Access FO	Major Arterial Road	OECF Between Harbour Road - Kemayoran
24.	Pluit-Martadinata	Major Arterial Road	APBN Structure Improvement
25.	Pluit-Jembatan Tiga	Toll Road	OECF
D.	Radial Roads		
26.	Jl. Daan Mogot	Major Arterial Road	APBN Grogol-Pesing (Widening + Overlay)
27.	Jl. Raya Bogor	Major Arterial Road	APBN Cililitan - DKI Boundary

No.	Description	Status	Remarks
28.	Perintis Kemerdekaan-Bekasi Raya	Major Arterial Road	APBN Jl. Suprpto/A. Yani - Bekasi Raya (Widening)
29.	Kranji FO	Major Arterial Road	APBN Cross the Jakarta-Bekasi Rail way
30.	Pesing FO	Major Arterial Road	APBN + IBRD Cross the Tangerang Line Rail way, Jl. Tubagus Angke, Route DD
31.	Bekasi By Pass	Major Arterial road	APBN New Construction
32.	Tangerang By Pass	Major Arterial Road	APBN + IBRD Improvement
33.	Tangerang By Pass FO	Major Arterial Road	APBN Cross the Tangerang Line Rail Way
34.	Bekasi Toll Access	Major Arterial Road	APBN Widening
35.	Pasar Minggu-Pejaten	Major Collector Road	APBN + IBRD New Construction
36.	Putri Hijau FO Phase II	Major Collector Road	APBN
D.	Radial		
37.	Kebayoran Lama FO	Major Collector Road	APBN + IBRD Cross the Serpong Line Rail Way (Jl. Kebayoran Lama-Ciledug Raya)
38.	Pasar Minggu FO	Major Collector Road	APBN + IBRD Cross the Depok Line Rail Way
39.	Jembatan Panus	Major Collector Road	APBN + IBRD Cange of Old Bridge
40.	Cileduk-DKI Boundary	Major Collector Road	APBN + PSL Widening
41.	Jl. Terusan Ngurah Rai	Major Collector Road	APBN New Construction
42.	Pondok Cina FO	Major Collector Road	APBN Cross the Depok Line Rail Way
43.	Putri Hijau-Senayan	Major Collector Road	APBN

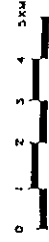
No.	Description	Status	Remarks
44.	Pondok Pinang - Pejompongan	Major Collector Road	APBN Jl. Pondok Pinang-Pejompongan (Widening)
45.	Cileduk Raya	Major Collector Road	APBN Kebayoran Lama FO - DKI Boundary (Widening)
46.	Pejompongan FO	Major Collector Road	APBN + IBRD Cross the Serpong Line Rail Way
47.	Anggrek Nelimurni FO	Major Collector Road	OECF Cross the Inner Ring Road (Slipi)
48.	Pasar Minggu-Depok Section VI & VII	Major Collector Road	APBN Jl. Margonda Raya (Widening)
49.	Pasar Minggu-Depok West Section V, East Section VI, West Section IV	Major Collector Road	APBN (Widening)
50.	Latuharhari Bridge	Secondary Arterial Road	APBN Cross the Rail Way, Ciliwung River, Jl. Latuharhari
51.	Jl. Selatan Tarum Barat	Secondary Arterial Road	APBN Parallel Jl. Kali Malang (From Cawang-Bekasi)
E.	International Air Show		
52.	Jl. Kayu Besar - Rawa Bokor	Secondary Collector Road	APBN Cengkareng Access (Improvement)
53.	Jl. Jurumudi	Local	APBN Cengkareng Access (Improvement)
54.	Jl. Material Dadap	Local	APBN Improvement
55.	Jl. Terusan Kali Deres- Material Dadap	Local	APBN New Construction
56.	Jl. Kali Deres	Local	APBN Shoulder of the Road Improvement

No.	Description	Status	Remarks
F.	Industry Zone		
57.	Jl. Kawasan Industri	Local	APBN (New Construction and Improvement) (Tangerang, Bekasi, Cikampek Industry Zone)
G.	Special Zone		
58.	Kawasan Sentul	Local	APBN New Construction
H.	Others Road		
59.	Tangerang-Serpong	Major Collector Road	APBN Tangerang-Serpong, including Overpass
60.	Cileungsi-Cibubur	Major Collector Road	APBN Cileungsi-Cibubur (New Construction)
61.	Sawangan - Jl. Raya Bogor	Major Collector Road	APBN Sawangan-Jl. Raya Bogor (Widening)
62.	Ciputat Raya Bridge	Major Collector Road	APBN Widening
63.	Jakarta Around	Major Collector Road	APBN Widening
I.	Transportation Container Route Road Improvement	Major Arterial Road	APBN Widening
J.	Maintenance of National Road	Major Arterial Road	APBN Widening

Fig. 5.1.1
ROAD NETWORK PLAN
BY DKI JAKARTA

LEGEND:

- ||||||| TOLL ROAD
- SECONDARY ARTERIAL ROAD
- SECONDARY COLLECTOR ROAD
- ○ FLYOVER
- ○ UNDERPASS



FEASIBILITY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA

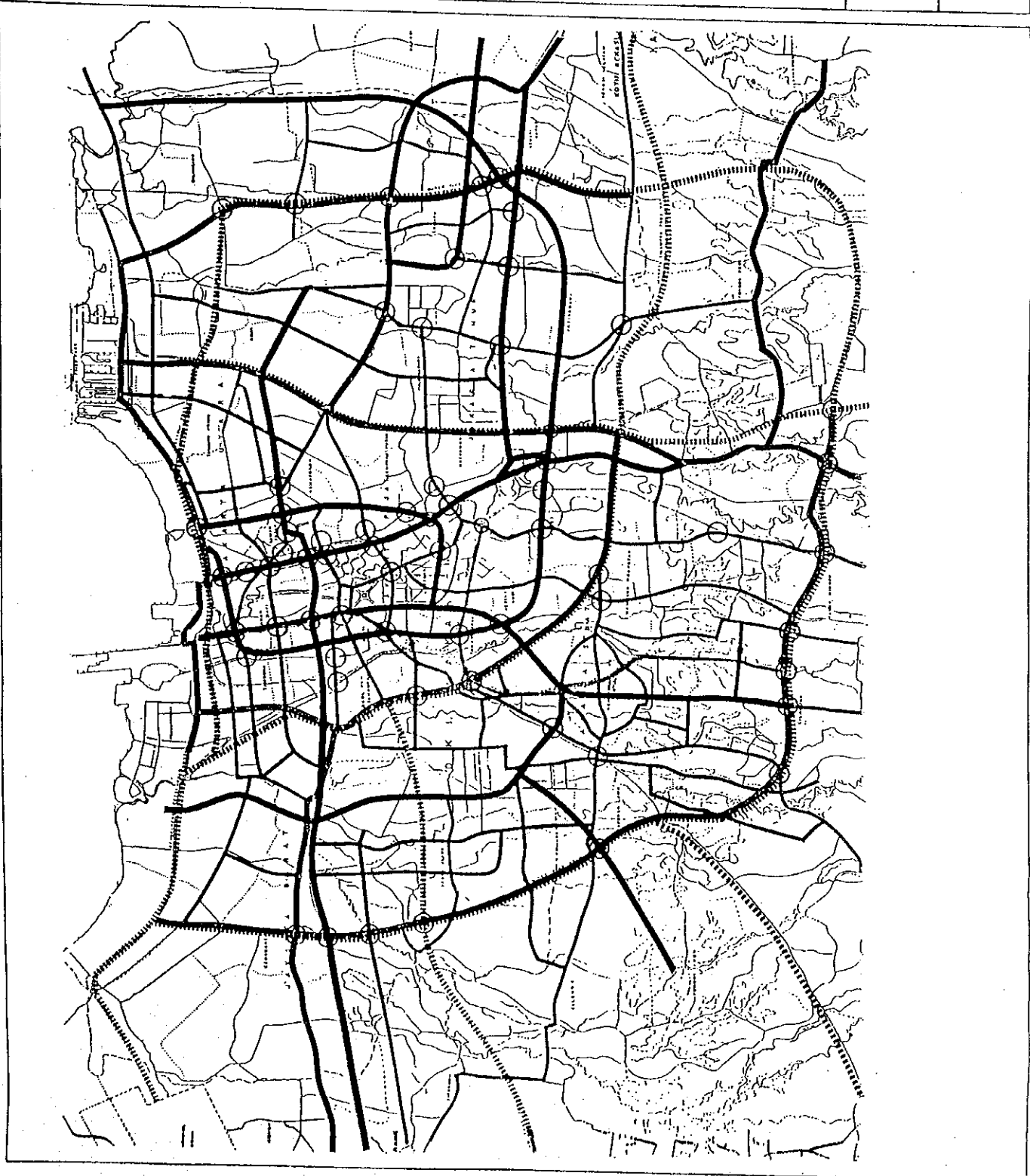


Fig. 5.1.2

ROAD NETWORK PLAN
BY BINA MARGA

LEGEND:

TOLL ROAD

PRIMARY / SECONDARY
ARTERIAL ROAD

PRIMARY COLLECTOR ROAD



FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA

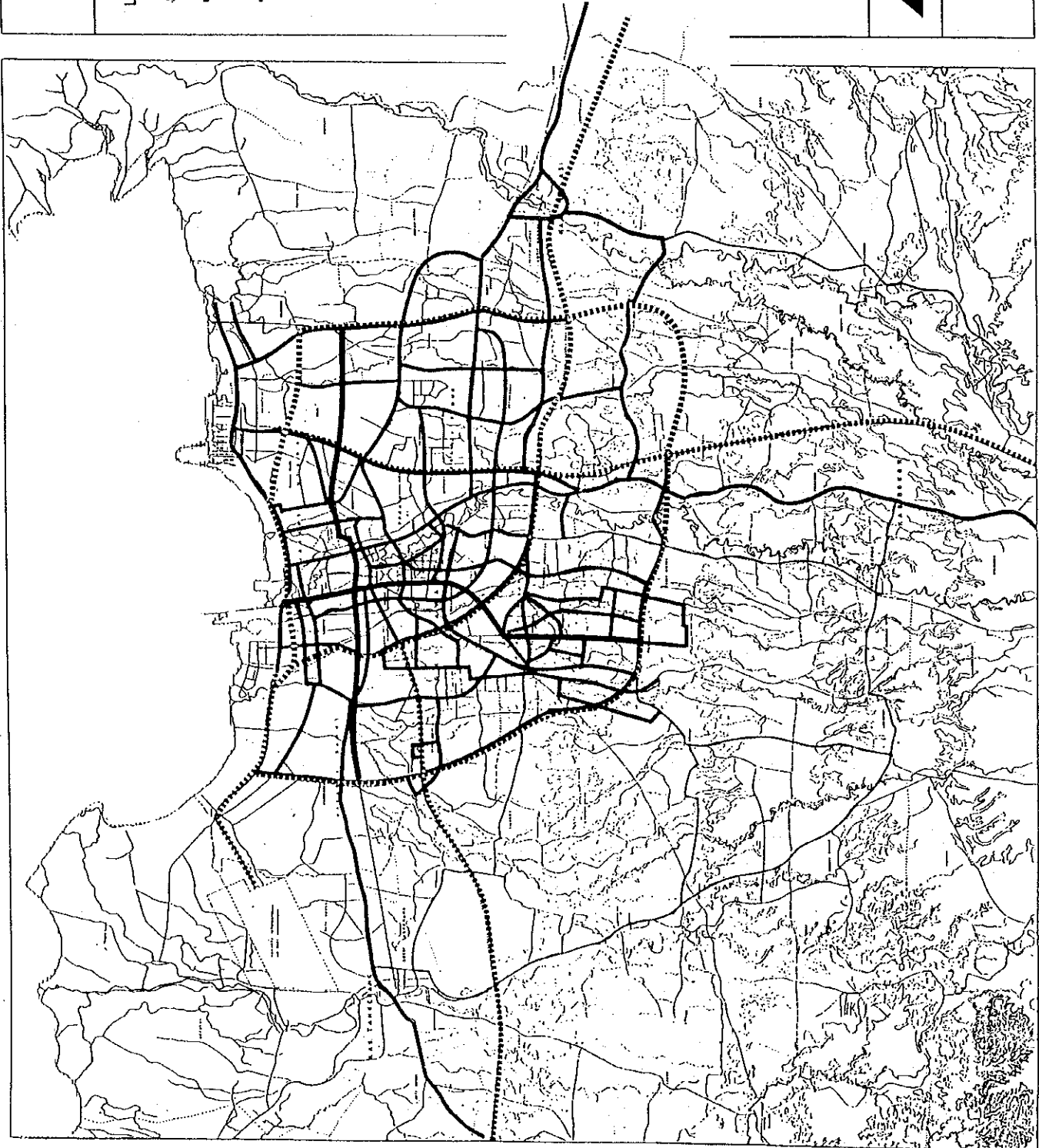
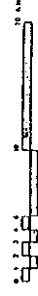


Fig. 5.1.3
ROAD NETWORK PLAN BY JMDPR
(2nd PLANNING REPORT)

LEGEND

— TOLL ROAD

— ARTERIAL ROAD



FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA



Fig. 5.1.4
TRANSPORTATION NETWORK
PLAN BY ARSDS

LEGEND

- Urbanized Area in Jakarta
- Conurbation Area
- Urban Development Area of Core City
- Industry
- Mixed Industry and Trade
- Agriculture
- Agriculture with Low Density Housing
- Green Preservation / Recreation
- Limited Development Area
- Metropolitan Center
- Sub Center
- Secondary Center
- Rural Center
- Airport
- Harbour
- Medium/Mass Transportation Corridor
- Freeways
- Primary Roads
- Secondary System Streets
- Rural Roads
- Railway



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URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA

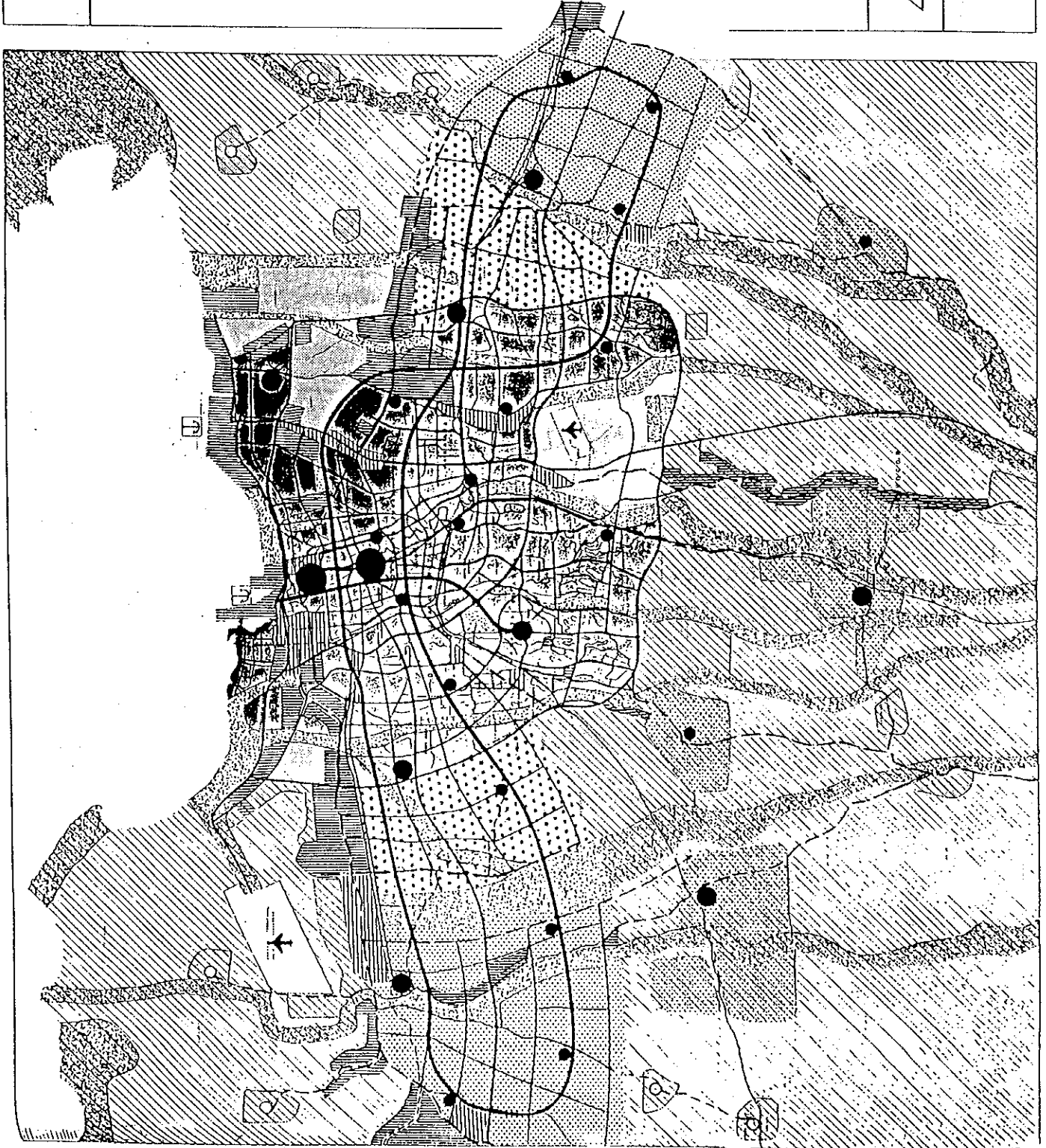








Fig. 5.1.5
ROAD PROJECTS IN JUDP-1 (IBRD FINANCE)
AND OECF FINANCE

LEGEND :

-  ROAD CONSTRUCTION/IMPROVEMENT BY BINA MARGA
-  FLYOVER CONSTRUCTION BY BINA MARGA
-  ROAD CONSTRUCTION/IMPROVEMENT BY DKI
-  FLYOVER CONSTRUCTION BY DKI
-  CANCELLED
-  CANCELLED



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 URBAN ARTERIAL ROAD SYSTEM
 DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA

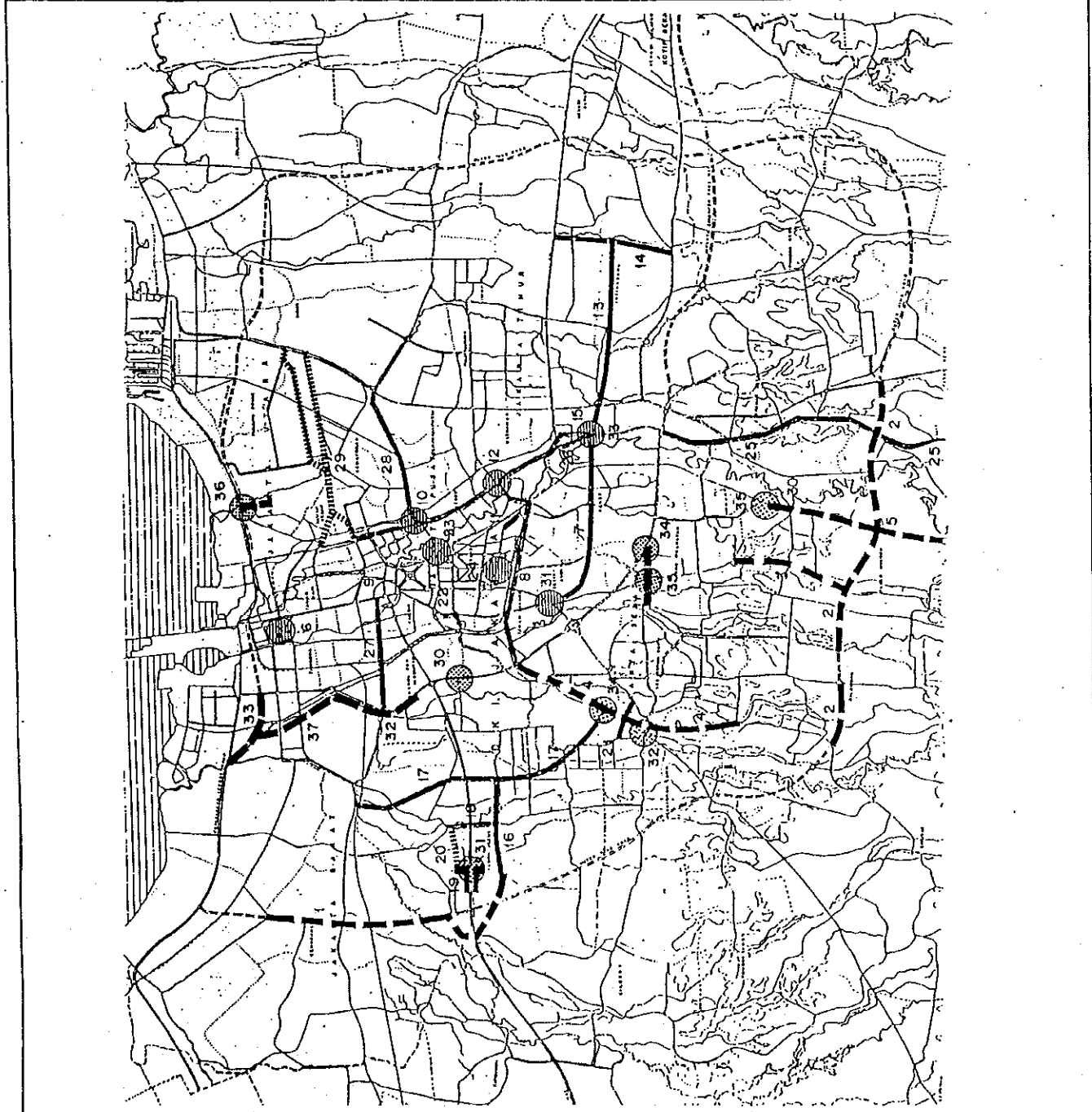






Fig. 5.1.6
ROAD PROJECTS IN PELITA VI
BY DPU (TENTATIVE)

LEGEND:

-  ARTERIAL / LOCAL ROADS
-  W - 1
-  G - 1
-  FLYOVER / UNDERPASS
- ARTERIAL / LOCAL ROADS
- WIDENING / NEW CONSTRUCTION
- FLYOVER / UNDERPASS
- FLYOVER



FEASIBILITY STUDY ON
 URBAN ARTERIAL ROAD SYSTEM
 DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA

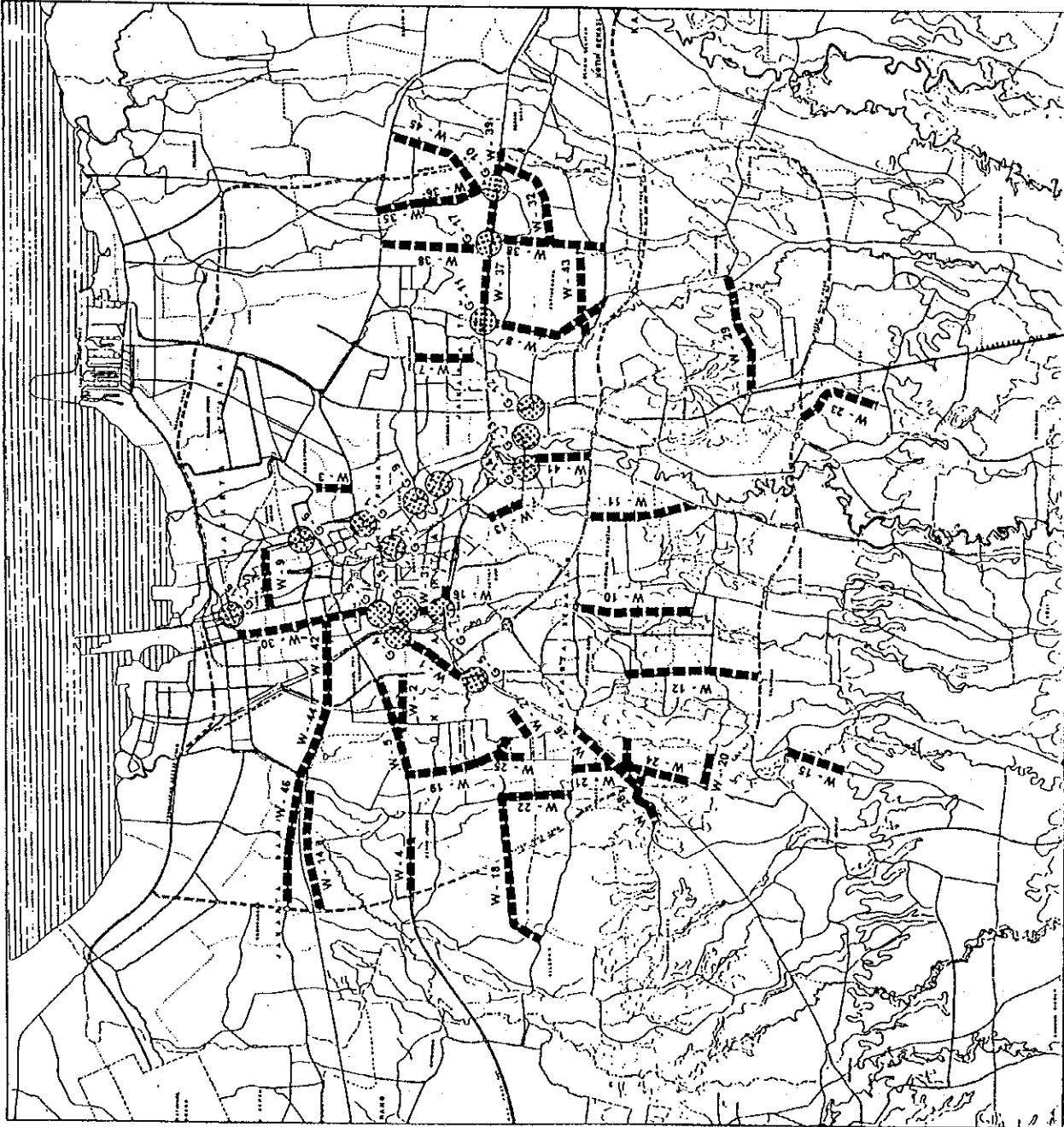



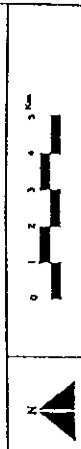


Fig. 5.1.7
ROAD PROJECT IN PELITA VI
BY BINA MARGA (†) (TENTATIVE)

LEGEND:
 WIDENING/NEW CONSTRUCTION
 FLYOVER / UNDERPASS
 BRIDGE



FEASIBILITY STUDY ON
 URBAN ARTERIAL ROAD SYSTEM
 DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA

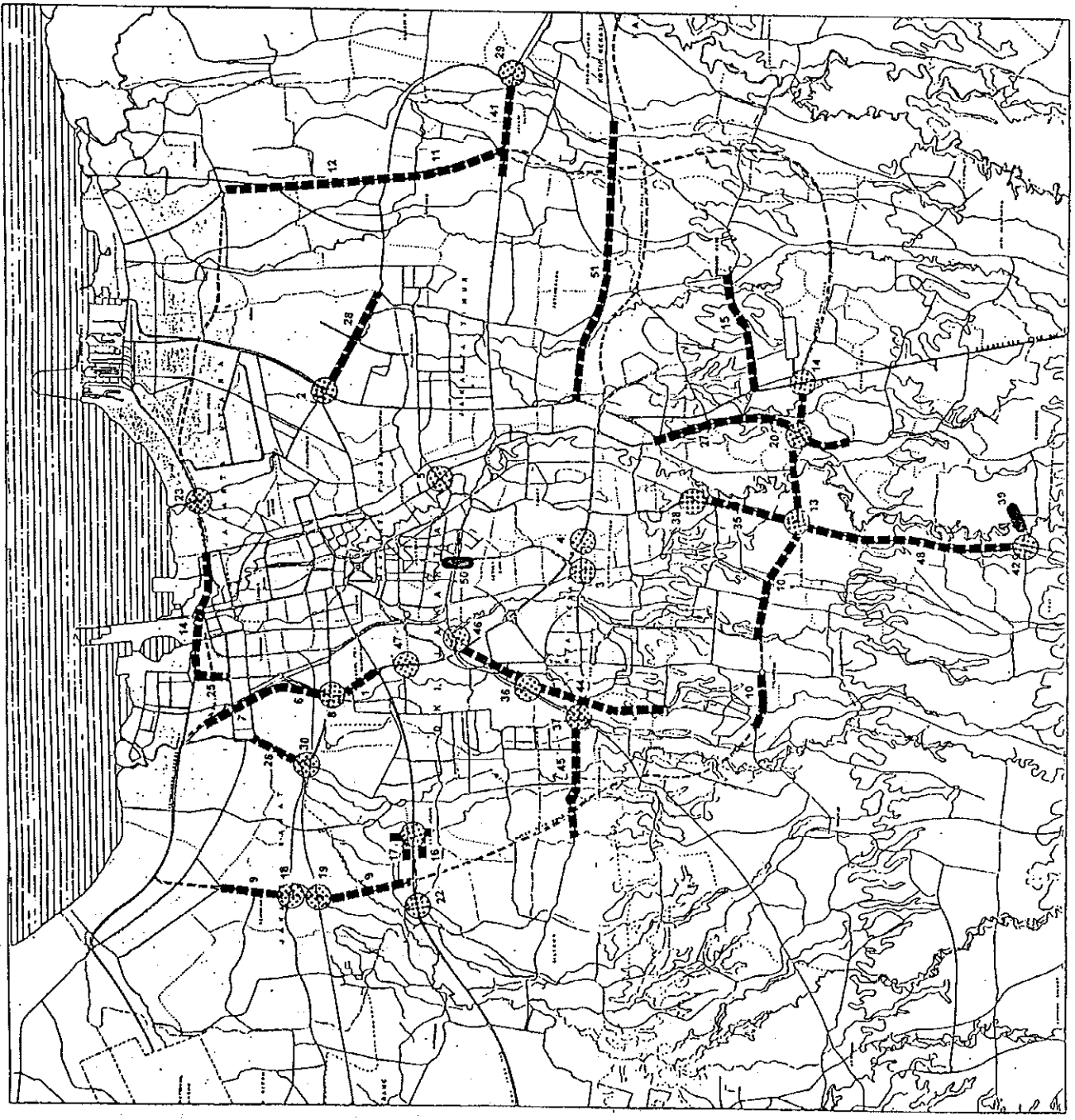




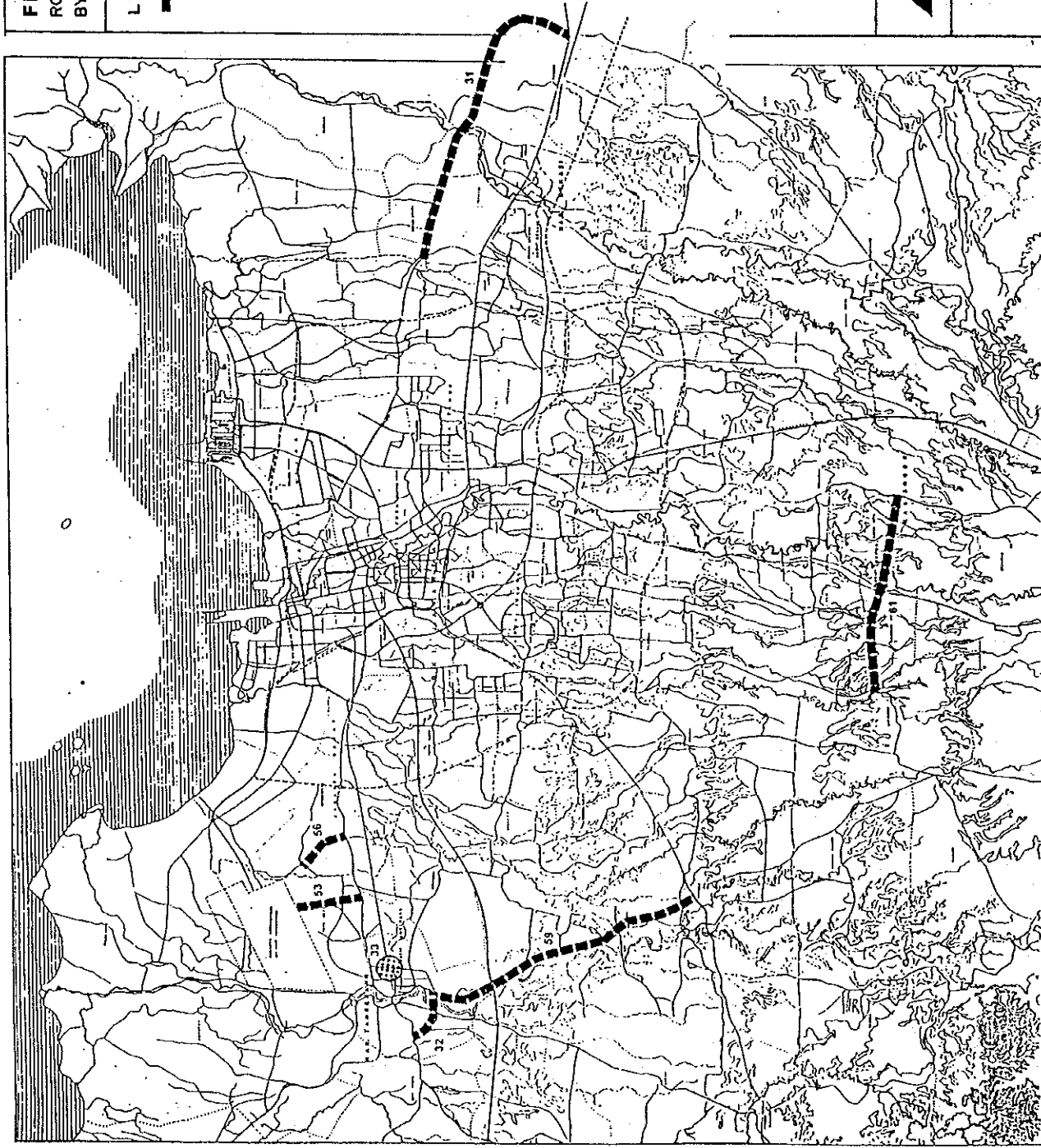
Fig. 5.1.8
ROAD PROJECTS IN PELITA VI
BY BINA MARGA (2) (TENTATIVE)

LEGEND:

-  WIDENING/NEW CONSTRUCTION
-  FLYOVER / UNDERPASS



FEASIBILITY STUDY ON
 URBAN ARTERIAL ROAD SYSTEM
 DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA



5.2 Future Public Transport System

5.2.1 Bus System

Currently, discussions concerning MRT (including Light Railway System) are proceeding vigorously, involving private investors, towards the implementation, and beginning with the formation of the inter-department working group and the preparation of the action program.

Although the proposed MRT network is more extensive than the existing conventional railway, a role of the city bus will inevitably remain as it is, or maybe become more intensive in the urban core area and more extensive in the urban fringe area. No matter when the MRT is introduced, city bus services for both trunk route and feeder system and inter-city bus services have to be well organized. After a mode and route of the MRT system is determined more detail the bus system should apparently be re-organized.

In order to improve inefficiency problem of the Jabotabek bus service, efforts have been made through the "Bus Management and Operations Improvement Implementation Project" of which implementation was financed by the First Jabotabek Urban Development Project.

The management inefficiency of city bus operation of microbus and mikrolets comparing the profitability of small bus operation of microbus and mikrolets and the Jakarta's private operation of city buses by Mayasari Bakti. PPD has had its city bus vehicles supplied and replaced at central government expense unit 1988, but it operated city buses at a loss.

Given the unacceptability of increasing subsidies, the only alternative is likely to exist in a decline in government controlled bus operations and an increasing role for the private sector. National policy, however, requires a balance between each type of operation and therefore, every effort must be made to improve the effectiveness and efficiency of the public sector operations.

In addition to its role as a provider of bus transport in Jabotabek, PPD city bus has three other functions :

- to generate funds, which can be transferred, as a cross subsidy, to pioneering operations
- to reduce the demands on restricted road space by the use of space efficient vehicles
- to act as a stabilizing influence on salary and fare levels in the public transport industry

In order to achieve these expected roles in public city bus operation, the Government had been rendering the following efforts :

- Route Planning, to optimize the use of buses
- Fleet maintenance, to improve bus availability
- Financial and management accounting, to provide more timely, relevant and accurate information
- Personnel management, to improve the skills and motivation of employees
- Corporate planning, inter alia to facilitate the transfer of the implementation to other cities and divisions of DAMRI

5.2.2 Mass Rapid Transit System

The final report of Jabotabek Urban Mass Transit System was published in June 1993 by Directorate General of Land Transport and Inland Waterways (PHBD), Ministry of Communications. Prior to the publication, the PHBD has been carried out the following three studies;

- i) Integrated Transport System Improvement by Railway and Feeder Services (ITSI) in 1990
- ii) Transport Network Planning and Regulation Project (TNPR) in 1992
- iii) Jakarta Mass Transit System Study (JMTSS) in 1992

The Jabotabek Urban Mass Transit System is proposed a mass transit network, based on the use of a combination of Light Rail Transit (LRT) and conventional heavy rail. The system consists of five new LRT lines in combination with two regional rail lines from Bogor and Bekasi including joint use of the Central and Tanjung Priok lines.





The PHBD has the implementation plan of the system in four phases of five years each, starting from the year 1995. They are;


- i) The first phase consists of two lines, namely Blok M - Kota route including a spur line on Jl. Casablanca and Tangerang - Bekasi route, totaling 55.1 km,
- ii) The second phase includes two spur lines of Tangerang - Bekasi route, namely Soekarno-Hatta International Airport spur and Kelapa Gading spur, and two spur lines of Kota - Blok M route, namely Blok M - Cipete extension and Ciledug - Blok M spur, totaling 27.0 km,
- iii) The third phase comprises Loop line and Tanah Abang - Pondok Kranji section on Serpong route, totaling 38.2 km,
- iv) The final phase includes four extensions, extension to West Bekasi (Kranji) on Tangerang - Bekasi route, eastern extension to Pasar Minggu on Casablanca spur line, Casablanca/Sudirman - Loop extension and extension to Serpong on Serpong route, totaling 24.5 km.

The consolidated network as shown in Fig. 5.2.1 comprises 80 km of new LRT lines, 65 km of conventional rail converted to LRT and 80 km of regional rail, totaling 225 km long and is scheduled to be completed by the year 2015.

Fig. 5.2.2 shows proposed LRT network and proposed road network.

Fig. 5.2.1
JABOTABEK URBAN MASS TRANSIT
SYSTEM YEAR 2015

- LEGEND :**
-  LRT
 -  HEAVY RAIL
 -  E - W AXIS
 -  N - S AXIS

 FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA

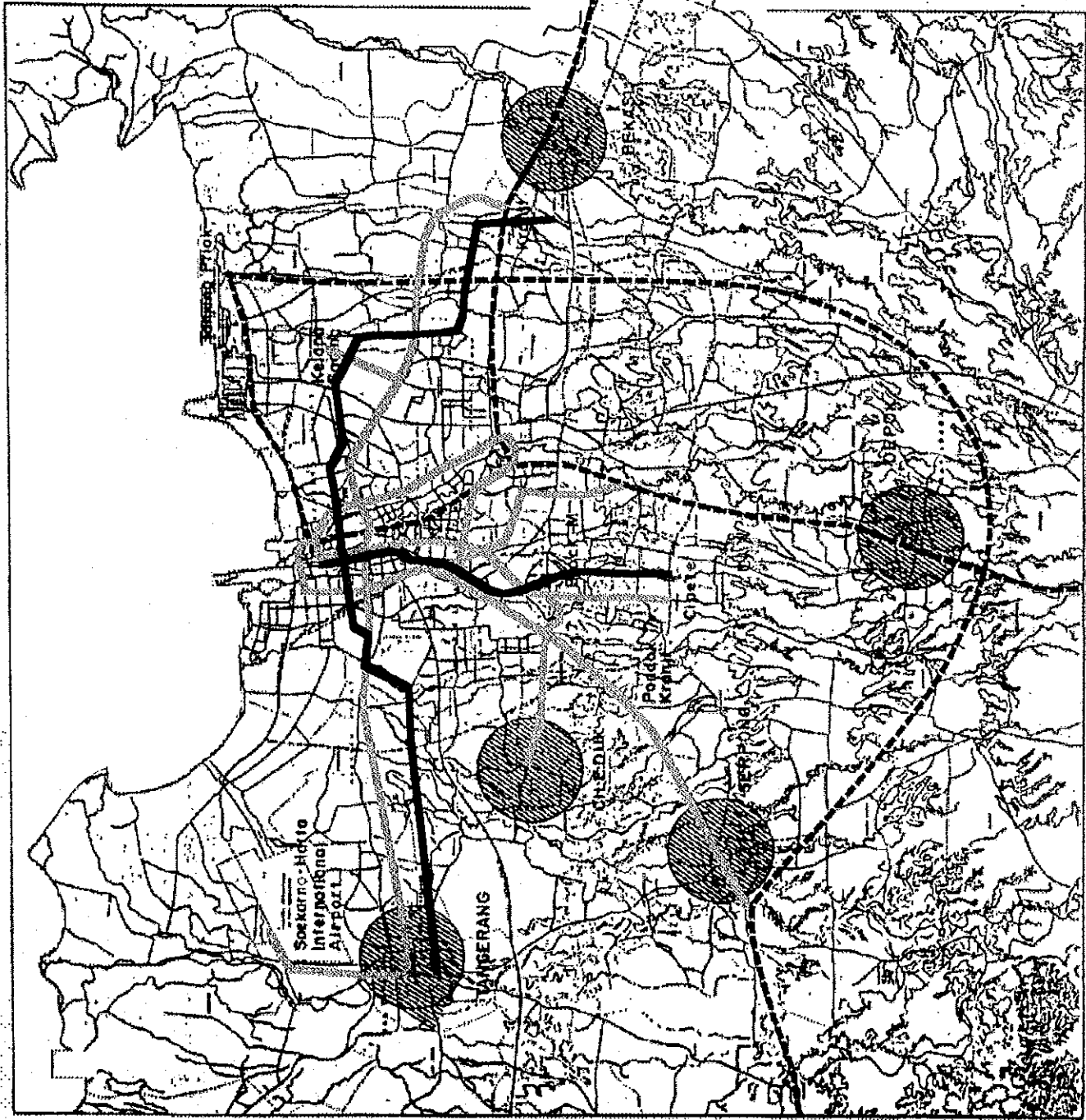



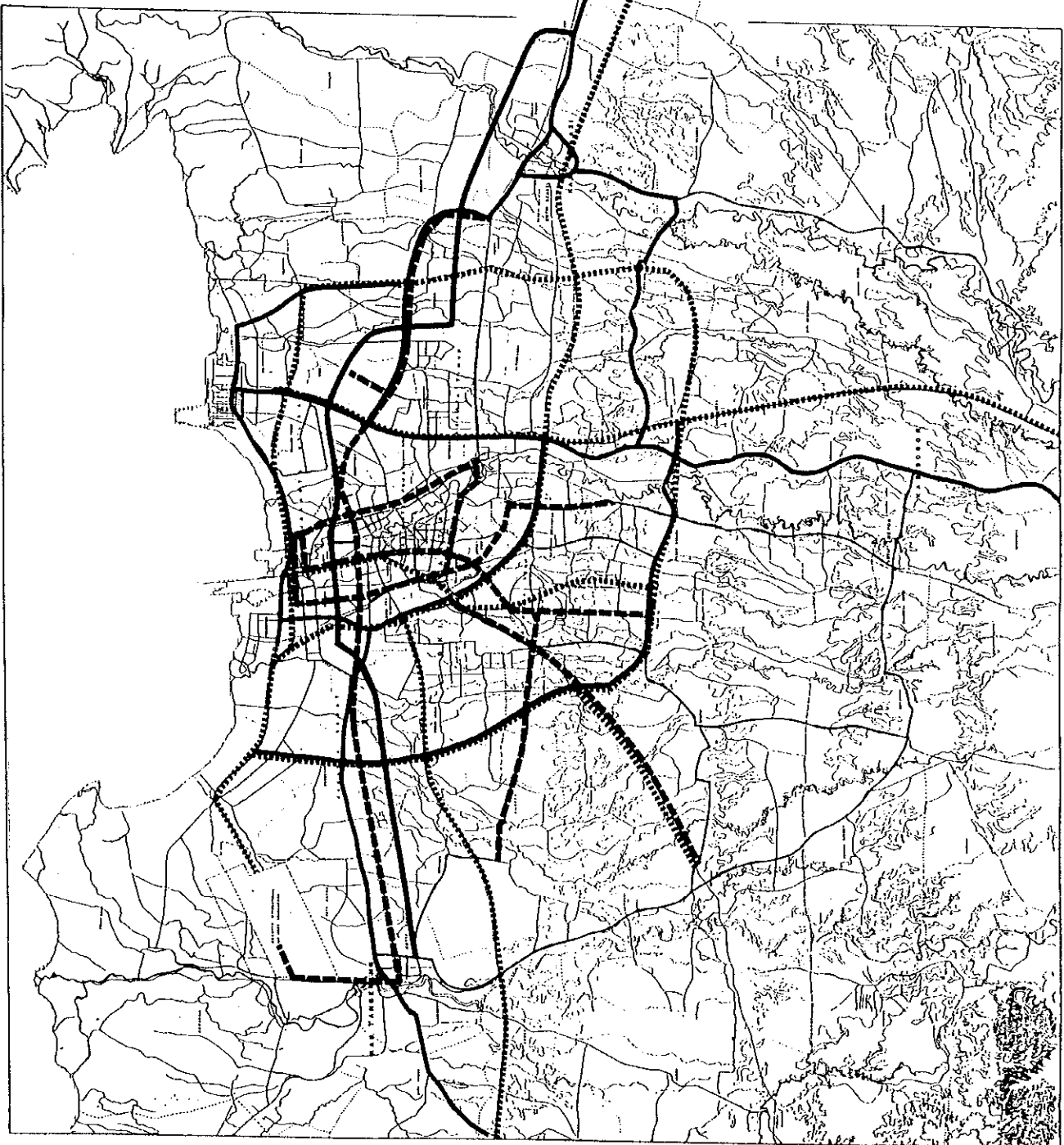


Fig. 5.2.2
PROPOSED LRT NETWORK AND
ROAD NETWORK

- LEGEND :
-  TOLL ROAD
 -  ARTERIAL ROAD
 -  L R T



FEASIBILITY STUDY ON
 URBAN ARTERIAL ROAD SYSTEM
 DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA



CHAPTER 6 ROAD TRAFFIC SURVEY

CHAPTER 10: THE MATHS OF PROBABILITY

Probability is a branch of mathematics that deals with the likelihood of an event occurring. It is a measure of uncertainty, and it is used in many areas of science, engineering, and business. In this chapter, we will explore the basic concepts of probability, including the addition and multiplication rules, and we will see how these rules are used to calculate the probability of complex events. We will also discuss the concept of conditional probability and the binomial distribution, which is a common probability distribution used in many applications.

The probability of an event occurring is a number between 0 and 1, where 0 represents the event never occurring and 1 represents the event always occurring. The probability of an event occurring is denoted by the letter P , and the probability of an event not occurring is denoted by the letter Q . The probability of an event occurring is the ratio of the number of favorable outcomes to the total number of possible outcomes. For example, if there are 10 possible outcomes and 3 of them are favorable, then the probability of a favorable outcome is $\frac{3}{10}$.

The addition rule states that the probability of either event A or event B occurring is the sum of the probabilities of A and B occurring, minus the probability of both A and B occurring. This is written as $P(A \cup B) = P(A) + P(B) - P(A \cap B)$. The multiplication rule states that the probability of both event A and event B occurring is the product of the probability of A occurring and the probability of B occurring, given that A has occurred. This is written as $P(A \cap B) = P(A) \cdot P(B|A)$.

Conditional probability is the probability of an event occurring, given that another event has occurred. It is denoted by $P(A|B)$, which is the probability of A occurring, given that B has occurred. The binomial distribution is a probability distribution that describes the number of successes in a fixed number of independent trials, each with a constant probability of success. It is denoted by $B(n, p)$, where n is the number of trials and p is the probability of success in each trial.

CHAPTER 6 ROAD TRAFFIC SURVEY

6.1 Classified Vehicle Count Survey and Analysis

(1) Survey Method

A classified vehicle count survey was carried out using manual traffic counters. Surveyors recorded vehicle counts on the survey form every one hour.

(2) Vehicle Classification:

The following classification of vehicles was used for vehicle count survey.

- 1) Motorcycle
- 2) Bajaj
- 3) Taxi
- 4) Sedan
- 5) Van
- 6) Pickup
- 7) Truck with 2 Axles
- 8) Truck with 3 Axles and over

(3) Survey Period

The count survey was conducted on weekdays (Tuesday, Wednesday, and Thursday) in the first three weeks, beginning from June 2, 1993. On each survey day, the survey was conducted for 16 hours (from 6:00 to 22:00), which was divided into two eight-hour survey shifts.

Shift 1 : 06:00 - 14:00

Shift 2 : 14:00 - 22:00

(4) Survey Location

Survey locations are shown in Figure 6.1.1.

- 1) Screen Line Survey
 - Screen Line (A) 11 locations (A1 - A 9)
 - Screen Line (B) 13 locations (B1 - B13)
- 2) Cordon Line Survey 14 locations (C1 - C14)
- 3) Other Traffic Count Survey 11 locations (1 - 11)

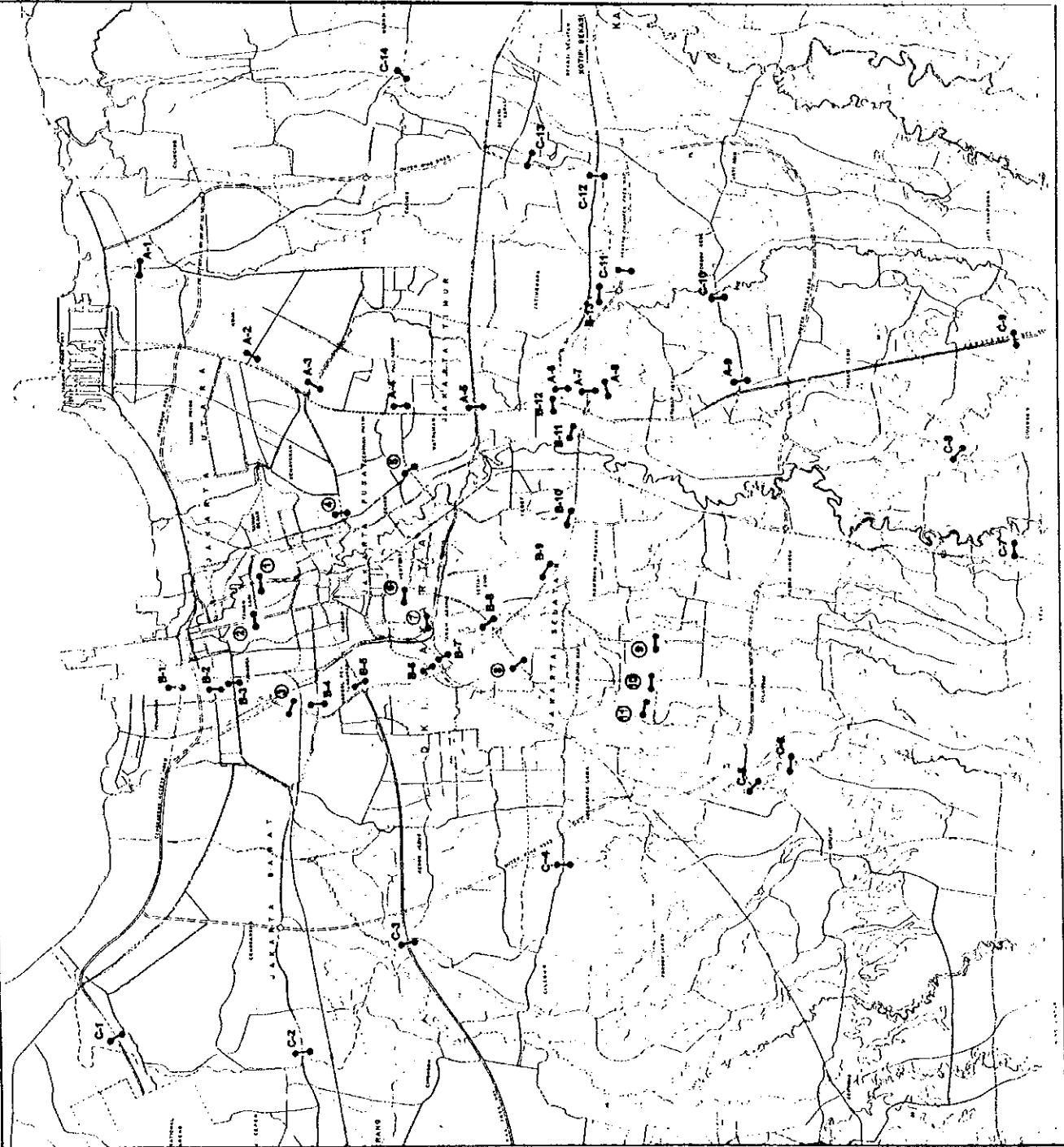
Fig. 6.1.1

TRAFFIC SURVEY LOCATION MAP

- A-9 : SCREEN LINE (A) SURVEY STATIONS
- B-13 : SCREEN LINE (B) SURVEY STATIONS
- C-14 : CORDON LINE SURVEY STATIONS
- (1) : SURVEY STATIONS ADJACENT TO THE PROJECT CORRIDORS



FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA



(5) Survey Result

The survey results are summarized in Table 6.1.1 through 6.1.4.

6.2 Bus Count Survey

(1) Method

Bus (passenger) count survey was conducted by counting number of buses classified by passenger capacity. Surveyors observed occupancy conditions of inside buses from roadside and marked in the appropriate column that represents several occupancy rates on the survey form.

(2) Classification of Buses

Buses are classified into the following categories according to the seating capacity:

- 1) Mini Bus (Mikrolet)
- 2) Medium-size Bus (Metro Mini, Kopaja, and Koantas)
- 3) Large Bus (Bis Kota, PATAS, PATAS AC)
- 4) Double Decker (Bis Tingkat)
- 5) Articulated Bus (Bis Tempel)

(3) Survey Period

The bus count survey was conducted simultaneously with the vehicle count survey.

(4) Survey Location

The survey locations for the bus count survey were same as those for the vehicle count survey.

(5) Survey Result

The resulting bus counts were multiplied by the representative occupancy rates by type of buses, and the estimated bus passengers to cross the survey stations are summarized in Table 6.2.1 through 6.2.4.

Table 6.1.1 Summary of Traffic Counts on Screen Line A

Loca- tion Code	Street Name	Direction		1	2 - 5				9 - 12	Total (Vehicles)		Total (P.C.U.)			
		Code	From		To	Motor- Cycle	Passenger Car	Bus		Truck	Heavy Vehicle Ratio (%)	2 - 12	1 - 12	2 - 12	1 - 12
												without M-Cycle	with M-Cycle	without M-Cycle	with M-Cycle
A-1	Kramat Jaya	A	Cilincing	Cakung	3,161	4,554	1,600	799	4.1	6,983	10,144	7,557	8,600		
		B	Cakung	Cilincing	3,646	5,274	1,678	864	4.1	7,814	11,480	8,401	9,604		
		A+B	Both Direction		6,807	9,858	3,278	1,663	4.1	14,797	21,804	15,958	18,204		
A-2	Raya Barat Boulevard	A	Yos Sudarso	Kelapa Gading	4,516	16,700	404	2,648	2.8	19,752	24,288	20,134	21,624		
		B	Kelapa Gading	Yos Sudarso	3,387	11,591	394	2,447	7.1	14,432	17,819	15,115	16,233		
		A+B	Both Direction		7,903	28,291	798	5,095	4.8	34,184	42,087	35,248	37,858		
A-3	Kemerdekaan	A	Pulo Gadung	Senen	10,613	12,862	2,271	4,660	20.9	19,793	30,406	23,429	26,931		
		B	Senen	Pulo Gadung	12,243	19,759	1,951	6,077	15.7	27,787	40,030	31,345	35,385		
		A+B	Both Direction		22,856	32,621	4,222	10,737	17.9	47,580	70,436	54,774	62,316		
A-4	Pemuda	A	Pemuda	A. Yani	10,591	19,877	1,958	5,125	9.8	26,980	37,551	29,385	32,880		
		B	A. Yani	Pemuda	9,006	23,087	1,862	3,298	6.7	28,247	37,253	30,136	33,108		
		A+B	Both Direction		19,597	42,964	3,820	8,423	8.2	55,207	74,804	59,520	65,987		
A-5	Bekasi Timur Raya	A	Klender	Jatinegara	12,749	23,199	5,710	4,638	6.7	33,545	48,294	36,602	40,809		
		B	Jatinegara	Klender	12,585	20,436	5,073	4,114	6.4	28,623	42,208	32,327	36,480		
		A+B	Both Direction		25,334	43,635	10,783	8,750	6.6	63,168	88,502	68,929	77,289		
A-6	Inspeksi	A	Pondok Kelapa	Cawang	10,568	10,889	4,008	2,308	4.0	17,205	27,773	18,647	22,134		
		B	Cawang	Pondok Kelapa	10,120	10,548	4,388	2,238	4.3	17,172	27,292	18,735	22,075		
		A+B	Both Direction		20,688	21,437	8,394	4,546	4.1	34,377	55,065	37,383	44,210		
A-7	Jembatan Trihora	A	Bekasi	Cawang	0	31,128	2,151	7,127	16.2	41,221	41,221	46,444	46,444		
		B	Cawang	Bekasi	0	30,497	2,455	8,269	16.1	41,221	40,406	45,300	45,300		
		A+B	Both Direction		0	61,825	4,606	15,396	16.1	81,627	81,627	91,744	91,744		
A-8	Halim Perdana Kusuma	A	Halim	Cawang	2,897	9,510	180	987	3.7	10,877	13,574	10,988	11,924		
		B	Cawang	Halim	2,724	10,383	161	1,095	3.5	11,639	14,363	11,953	12,852		
		A+B	Both Direction		5,621	19,893	341	2,082	3.6	22,316	27,937	22,921	24,776		
A-9	Raya Pondok Gede	A	Pondok Gede	Kramat Jati	3,810	4,285	3,992	1,139	4.4	9,416	13,228	10,499	11,756		
		B	Kramat Jati	Pondok Gede	3,908	4,225	4,033	1,100	5.8	9,358	13,266	10,511	11,801		
		A+B	Both Direction		7,718	8,510	8,025	2,239	5.0	18,774	26,492	21,010	23,557		

Table 6.1.2 Summary of Traffic Counts on Screen Line B

Loca- tion Code	Street Name	Direction		1	9 - 12			Heavy Vehicle Ratio (%)	Total (Vehicles)		Total (P.C.U.)			
		Code	From		To	Motor- Cycle	Passenger Car		Bus	Truck	2 - 12		1 - 12	
											without M-Cycle	with M-Cycle	without M-Cycle	with M-Cycle
B-1	Pluit Raya	A	Pluit	Kota	6,833	12,688	303	4,885	17,171	17,876	24,709	20,197	22,452	
		B	Kota	Pluit	6,756	12,991	279	4,038	12,3	17,308	24,064	19,445	21,874	
B-2	Bandengan	A+B	Both Direction		13,589	25,679	582	8,923	14,7	35,184	48,773	39,842	44,128	
		A	Teluk Gong	Kota	7,884	10,551	1,771	6,190	19,2	18,512	26,398	20,990	23,592	
B-3	P. Tubagus Angke	B	Kota	Teluk Gong	12,147	12,544	1,889	5,786	16,2	20,219	32,366	22,500	26,589	
		A+B	Both Direction		20,031	23,085	3,660	11,976	17,6	38,731	58,762	43,549	50,159	
B-4	Kyai Tapa	A	P. Tubagus Angke	Perniagaan	15,850	11,444	1,467	4,199	10,9	17,110	32,960	18,617	23,848	
		B	Perniagaan	P. Tubagus Angke	10,439	10,951	1,392	3,914	6,8	16,257	26,696	17,312	20,757	
B-5	Tomang Raya	A+B	Both Direction		26,289	22,395	2,859	8,113	8,9	33,367	59,656	35,929	44,604	
		A	Grogol	Roxi	25,491	36,886	3,035	6,291	4,7	46,212	71,703	48,875	57,087	
B-6	K.S. Tubun	B	Roxi	Grogol	22,016	31,560	3,132	5,134	5,3	39,826	61,842	42,234	49,499	
		A+B	Both Direction		47,507	68,446	6,167	11,425	5,0	86,038	133,545	90,909	106,586	
B-7	Keuangan	A	Tomang	Harmoni	16,298	37,975	751	4,873	4,2	43,599	59,897	44,873	50,251	
		B	Harmoni	Tomang	14,188	23,381	852	4,302	7,8	28,535	42,723	30,086	34,767	
B-8	Jendral Sudirman	A+B	Both Direction		30,486	61,356	1,603	9,175	5,6	72,134	102,620	74,958	85,018	
		A	Tanah Abang	Tanah Abang	5,875	8,121	6,565	1,251	2,0	15,937	12,812	17,534	19,473	
B-9	Rasuna Said	B	Tanah Abang	Gatot Subroto	5,850	6,663	6,372	1,279	2,8	14,314	20,184	15,979	17,910	
		A+B	Both Direction		11,725	14,784	12,937	2,530	2,4	30,251	41,976	33,513	37,392	
B-10	Dr. Supomo	A	Simpuruk By Pass	Pejompongan	5,895	12,068	890	1,696	4,3	14,852	20,547	15,359	17,304	
		B	Pejompongan	Simpuruk By Pass	6,450	16,365	944	1,884	3,2	19,193	25,643	19,945	22,074	
B-11	Otista	A+B	Both Direction		12,345	28,431	1,834	3,580	3,7	33,845	46,190	35,304	39,378	
		A	Semanggi	H.I.	21,987	72,937	3,960	3,941	4,1	80,838	102,825	84,545	91,801	
B-12	D.I. Panjaitan	B	H.I.	Semanggi	19,778	74,333	3,564	4,524	3,6	82,421	102,199	85,725	92,252	
		A+B	Both Direction		41,765	147,270	7,524	8,465	3,9	163,259	205,024	170,270	184,052	
B-13	Raya Jatiwaringin	A	P.N. Timah	Menteng	12,362	38,572	1,191	1,892	1,0	41,655	54,017	42,457	46,536	
		B	Menteng	P.N. Timah	13,051	32,905	1,215	2,483	2,2	36,603	49,654	37,664	41,971	
B-14	Raya Jatiwaringin	A+B	Both Direction		25,413	71,477	2,406	4,375	1,6	78,258	103,671	80,121	88,507	
		A	Pancoran	Manggarai	8,782	19,763	1,343	1,939	3,0	23,045	31,827	24,088	26,986	
B-15	Raya Jatiwaringin	B	Manggarai	Pancoran	8,205	18,872	1,461	1,916	2,9	22,249	30,454	23,301	26,009	
		A+B	Both Direction		16,987	38,635	2,804	3,855	3,0	45,294	62,281	47,389	52,995	
B-16	Raya Jatiwaringin	A	Cililitan	Kampung Melayu	10,865	17,480	6,093	3,075	4,2	26,648	37,513	28,817	32,402	
		B	Kampung Melayu	Cililitan	11,014	20,261	7,166	3,621	4,8	31,048	42,062	33,615	37,250	
B-17	Raya Jatiwaringin	A+B	Both Direction		21,879	37,741	13,259	6,696	4,5	57,696	79,575	62,432	69,652	
		A	Cililitan	Tanjung Priok	12,593	30,286	4,018	6,742	9,7	41,046	53,639	45,007	49,163	
B-18	Raya Jatiwaringin	B	Tanjung Priok	Cililitan	12,752	25,319	4,677	6,746	10,6	36,742	49,494	40,896	45,104	
		A+B	Both Direction		25,345	55,605	8,695	13,488	10,1	77,788	103,133	85,903	94,267	
B-19	Raya Jatiwaringin	A	Pondok Gede	Kali Malang	5,707	9,505	1,687	1,839	4,3	13,031	18,738	13,727	15,610	
		B	Kali Malang	Pondok Gede	5,499	10,091	1,546	1,893	4,7	13,520	19,019	14,213	16,028	
B-20	Raya Jatiwaringin	A+B	Both Direction		11,206	19,596	3,233	3,722	4,5	26,551	37,757	27,940	31,638	

Table 6.1.3 Summary of Traffic Counts on Cordon Line

Location Code	Street Name	Direction		1	2 - 5	6 - 8	9 - 12	Heavy Vehicle Ratio (%)	Total (Vehicles)		Total (P.C.U.)					
		From	To						Motor-Cycle	Passenger Car	Bus	Truck	2 - 12	1 - 12	2 - 12	1 - 12
													without M-Cycle	with M-Cycle	without M-Cycle	with M-Cycle
C-1	Pluit Selatan	A	Cengkareng	3,766	12,668	388	1,325	3.5	14,381	18,147	14,820	16,063				
		B	Grogol	801	8,698	352	1,427	9.0	10,477	11,278	11,343	11,607				
		A+B	Both Direction	4,567	21,366	740	2,752	5.8	24,858	29,425	26,162	27,669				
C-2	Daan Mogot	A	Tangerang	11,354	6,571	3,744	7,508	30.8	17,823	29,177	22,267	26,014				
		B	D.K.I	9,675	8,666	3,913	7,267	27.1	19,946	29,521	24,308	27,501				
		A+B	Both Direction	21,029	15,237	7,657	14,775	28.9	37,869	58,698	46,575	53,515				
C-3	Toll Pesanggrahan	A	Merak	0	14,459	1,325	6,952	25.6	22,766	22,768	22,084	27,064				
		B	Jakarta	0	11,596	1,245	6,287	26.9	19,128	19,128	22,885	22,885				
		A+B	Both Direction	0	26,055	2,570	13,239	26.2	41,894	41,894	49,949	49,949				
C-4	Ciledug Raya	A	Ciledug	12,204	7,951	3,340	1,696	3.3	12,987	25,191	14,243	18,270				
		B	Kebayoran	5,724	4,716	3,263	1,528	5.3	9,507	15,231	10,834	12,723				
		A+B	Both Direction	17,928	12,667	6,603	3,224	4.2	22,494	40,422	25,077	30,993				
C-5	Ciputat Raya	A	Ciputat	7,835	12,608	3,849	2,563	6.4	19,020	26,855	20,784	23,350				
		B	Lebak Bulus	7,534	12,541	4,095	3,000	7.1	19,638	27,170	21,535	24,021				
		A+B	Both Direction	15,369	25,149	7,944	5,563	6.8	38,658	54,025	42,299	47,371				
C-6	Cireunde Raya	A	Pondok Gede	2,384	5,127	1,420	1,729	8.8	8,276	10,860	8,943	9,730				
		B	Lebak Bulus	2,606	5,149	1,325	1,721	8.3	8,195	10,801	8,841	9,701				
		A+B	Both Direction	4,990	10,276	2,745	3,450	8.4	16,471	21,481	17,784	19,431				
C-7	Rawa Bambu	A	Depok	5,771	9,589	3,127	2,455	9.9	15,171	20,942	17,244	19,148				
		B	Pasar Minggu	6,002	12,527	3,371	2,864	8.3	18,762	24,764	20,967	22,948				
		A+B	Both Direction	11,773	22,116	6,498	5,319	9.0	33,933	45,706	38,211	42,096				
C-8	Raya Bogor	A	Bogor	5,011	5,350	5,754	2,866	11.1	13,970	16,981	16,288	17,942				
		B	Jakarta	5,033	4,751	7,034	2,874	11.1	14,459	19,492	17,082	18,723				
		A+B	Both Direction	10,044	10,101	12,788	5,540	11.1	28,429	36,473	33,350	36,665				
C-9	Toll Jagorawi/Cibubur	A	Bogor	0	11,268	1,353	4,795	25.1	17,416	17,416	21,109	21,109				
		B	Jakarta	0	11,152	1,287	4,813	23.3	17,252	17,252	20,671	20,671				
		A+B	Both Direction	0	22,420	2,640	9,608	24.2	34,668	34,668	41,780	41,780				
C-10	Raya Pondok Gede	A	Pondok Gede	4,438	4,141	3,404	1,003	2.8	8,548	12,986	9,413	10,878				
		B	Kramat Jati	4,523	4,080	3,574	979	3.7	8,633	13,156	9,557	11,050				
		A+B	Both Direction	8,961	8,221	6,978	1,982	3.3	17,181	26,142	18,970	21,927				
C-11	Toll Cikampek-Jakarta	A	Cikampek	0	21,949	1,950	7,583	19.1	31,462	31,462	35,973	35,973				
		B	Jakarta	0	22,227	2,126	7,767	18.8	32,120	32,120	36,723	36,723				
		A+B	Both Direction	0	44,176	4,076	15,330	18.9	63,582	63,582	72,695	72,695				
C-12	Raya Kalimalang	A	Bekasi	8,861	6,154	2,841	2,041	4.8	11,039	19,900	11,886	14,810				
		B	Halim	7,828	10,123	2,792	2,471	5.2	15,386	23,214	16,390	18,973				
		A+B	Both Direction	16,689	16,277	5,633	4,515	5.0	26,425	43,114	28,276	33,783				
C-13	Toll Cikunir-Cilincing	A	Cikunir	0	3,987	808	4,061	40.2	8,856	8,856	11,950	11,950				
		B	Cakung	0	3,881	865	3,968	41.5	8,714	8,714	11,832	11,832				
		A+B	Both Direction	0	7,868	1,673	8,029	40.9	17,570	17,570	23,782	23,782				
C-14	Bekasi Raya	A	Bekasi	12,519	5,614	2,524	3,860	22.0	11,998	24,517	14,655	18,786				
		B	Pulo Gadung	10,671	7,204	2,912	5,832	28.3	15,948	26,819	20,986	24,507				
		A+B	Both Direction	23,190	12,818	5,436	9,692	25.6	27,946	51,136	35,641	43,294				

Table 6.1.4 Summary of Traffic Counts on Other Survey Locations

Location Code	Street Name	Direction		Total (Vehicles)										Total (P.C.U.)			
		Code	From	To	1		2-5		6-8		9-12		Heavy Vehicle Ratio (%)	2-12		1-12	
					Motor-Cycle	Passenger Car	Bus	Truck	without M-Cycle	with M-Cycle	without M-Cycle	with M-Cycle		without M-Cycle	with M-Cycle		
1	Tamansari	A	Sukarjo W.Pranoto	Mangga Besar	5,277	10,651	0	1,035	1.3	11,686	16,963	11,762	13,503				
		A+B	Both Direction		5,277	10,651	0	1,035	1.3	11,686	16,963	11,762	13,503				
2	Gajah Mada Hayam Wuruk	A	Blok M	Kota	26,828	38,664	6,769	6,452	3.9	51,885	78,713	54,691	63,544				
		B	Kota	Blok M	26,941	38,767	6,250	6,089	4.1	51,106	78,047	53,782	62,673				
3	Latumenten	A+B	Both Direction		53,769	77,431	13,019	12,541	4.0	102,991	156,760	108,474	126,218				
		A	Pluit	Grogol	8,998	31,326	991	9,312	11.9	41,629	50,527	44,916	47,952				
4	Suprpto	B	Grogol	Pluit	10,862	28,648	2,097	9,428	13.4	40,173	50,835	43,848	47,364				
		A+B	Both Direction		19,560	59,974	3,088	18,740	12.7	81,802	101,362	88,763	95,218				
5	Pramuka	A	Kemerdekaan	Senen	14,217	28,876	3,925	3,998	6.1	36,799	51,018	39,778	44,470				
		B	Senen	Kemerdekaan	16,446	30,052	5,691	4,353	6.5	40,096	56,542	43,739	49,166				
6	Thamrin	A+B	Both Direction		30,863	58,928	9,616	8,351	6.3	76,895	107,558	83,517	93,636				
		A	Pemuda	Matraman	12,345	32,993	1,993	2,814	5.5	37,800	50,145	39,903	43,977				
7	Mas Mansyur	B	Matraman	Pemuda	12,901	33,122	1,978	3,246	5.8	38,346	51,247	40,489	44,746				
		A+B	Both Direction		25,246	66,115	3,971	6,080	5.7	76,146	101,392	80,392	88,723				
8	Jendral Sudirman	A	Monas	Sudirman	12,965	50,305	2,343	2,488	2.7	55,136	68,101	57,082	61,360				
		B	Sudirman	Monas	14,849	44,525	2,469	580	3.1	47,574	62,423	49,539	54,439				
9	P. Antasari	A+B	Both Direction		27,814	94,830	4,812	3,068	2.9	102,710	130,524	106,621	115,800				
		A	Karet Tengsin	Harmoni	7,637	23,361	711	2,037	1.0	26,109	33,746	26,593	29,113				
10	R.S. Fatmawati	B	Harmoni	Karet Tengsin	10,276	19,966	738	1,638	1.4	22,342	32,618	22,872	26,263				
		A+B	Both Direction		17,913	43,327	1,449	3,675	1.2	48,451	66,364	49,465	55,376				
11	Radio Dalam	A	Ratu Plaza	Semanggi	18,638	70,431	3,167	3,815	4.3	77,413	96,051	80,682	86,833				
		B	Semanggi	Ratu Plaza	16,193	65,441	3,234	3,308	3.8	71,984	88,177	75,038	80,382				
12	Radio Dalam	A+B	Both Direction		34,831	135,872	6,401	7,124	4.1	149,397	184,228	155,721	167,215				
		A	Cilandak	Blok M	3,515	22,908	1,242	1,669	2.7	25,819	29,334	26,793	27,953				
13	P. Antasari	B	Blok M	Cilandak	4,398	20,203	1,386	1,823	2.8	23,412	27,810	24,454	25,906				
		A+B	Both Direction		7,913	43,111	2,628	3,492	2.8	49,231	57,144	51,247	53,858				
14	R.S. Fatmawati	A	Pondok Labu	Blok M.	5,170	18,223	1,711	1,789	2.5	21,723	26,893	22,851	24,557				
		B	Blok M.	Pondok Labu	4,376	12,396	1,772	1,584	3.4	15,742	20,118	16,925	18,369				
15	Radio Dalam	A+B	Both Direction		9,546	30,609	3,483	3,373	2.9	37,465	47,011	39,776	42,926				
		A	Radio Dalam	Blok M	4,326	14,583	639	796	2.0	16,018	20,344	16,499	17,927				
16	Radio Dalam	B	Blok M	Radio Dalam	4,380	17,829	554	931	1.8	19,314	23,694	19,771	21,216				
		A+B	Both Direction		8,706	32,412	1,193	1,727	1.9	35,332	44,038	36,270	39,143				

Table 6.2.1 Estimated Bus Passengers Crossing Screen Line A

Location Code	Street Name	Direction				Number of Passengers					Total Number of Passengers
		Code	From	To	Small Bus	Medium Bus	Large Bus	Double Decker	Articulated Bus		
A-1	Kramat Jaya	A	Cilincing	Cekung	7,449	1,820	0	0	0	9,269	
		B	Cakung	Cilincing	8,242	1,670	540	0	0	10,452	
		A+B	Both Direction		15,691	3,490	540	0	0	19,721	
A-2	Raya Barat Boulevard	A	Kelapa Gading	Yos Sudarso	1,893	300	160	0	0	2,343	
		B	Yos Sudarso	Kelapa Gading	2,010	710	215	0	0	2,935	
		A+B	Both Direction		3,893	1,010	375	0	0	5,278	
A-3	Kemerdekaan	A	Pulo Gadung	Senen	45	10,085	74,155	0	0	84,285	
		B	Senen	Pulo Gadung	25	9,360	85,335	0	0	94,740	
		A+B	Both Direction		70	19,465	159,490	0	0	179,025	
A-4	Pemuda	A	Pemuda	A. Yani	163	16,655	45,620	7,030	0	69,468	
		B	A. Yani	Pemuda	84	17,310	48,090	6,910	0	72,394	
		A+B	Both Direction		247	33,965	93,710	13,940	0	141,862	
A-5	Bekasi Timur Raya	A	Klender	Jatinegara	20,372	36,760	36,340	600	0	94,072	
		B	Jatinegara	Klender	15,375	42,685	31,670	1,000	0	90,730	
		A+B	Both Direction		35,747	79,445	68,010	1,600	0	184,802	
A-6	Inepeksi	A	Pondok Kelapa	Cawang	22,378	25,445	60	0	0	47,883	
		B	Cawang	Pondok Kelapa	27,514	26,465	380	0	0	54,359	
		A+B	Both Direction		49,892	51,910	440	0	0	102,242	
A-7	Jembatan Trikora	A	Bekasi	Cawang	1,807	4,875	110,430	0	0	117,112	
		B	Cawang	Bekasi	1,284	3,880	105,010	0	0	110,174	
		A+B	Both Direction		3,091	8,755	215,440	0	0	227,286	
A-8	Halim Perdana Kusuma	A	Halim	Cawang	74	575	2,820	260	0	3,729	
		B	Cawang	Halim	52	625	1,960	0	0	2,637	
		A+B	Both Direction		126	1,200	4,780	260	0	6,366	
A-9	Raya Pondok Gede	A	Pondok Gede	Kramat Jati	24,084	1,310	10,535	0	0	35,929	
		B	Kramat Jati	Pondok Gede	22,681	790	12,660	0	0	36,131	
		A+B	Both Direction		46,765	2,100	23,195	0	0	72,060	

Table 6.2.2 Estimated Bus Passengers Crossing Screen Line B

Location Code	Street Name	Direction				Number of Passengers					Total Number of Passengers
		Code	From		To	Small Bus	Medium Bus	Largo Bus	Double Decker	Articulated Bus	
			A	B							
B-1	Pluit Raya	A	Pluit	Kota	91	6,990	2,530	0	0	9,511	
		B	Kota	Pluit	44	7,195	1,760	0	0	8,999	
		A+B	Both Direction		135	14,085	4,290	0	0	18,510	
B-2	Bandengan	A	Teluk Gong	Kota	9,925	6,930	710	0	0	17,465	
		B	Kota	Teluk Gong	9,862	6,395	2,640	0	0	18,897	
		A+B	Both Direction		19,787	13,225	3,350	0	0	36,362	
B-3	P. Tubagus Angke	A	P. Tubagus Ang	Perniagaan	8,536	7,250	0	0	0	15,786	
		B	Perniagaan	P. Tubagus Ang	7,815	6,565	155	0	0	14,535	
		A+B	Both Direction		16,351	13,815	155	0	0	30,321	
B-4	Kyai Tapa	A	Grogol	Roxi	3,998	45,695	48,025	0	0	97,718	
		B	Roxi	Grogol	5,670	39,045	36,785	0	0	81,500	
		A+B	Both Direction		9,668	84,740	84,810	0	0	179,218	
B-5	Tomang Raya	A	Tomang	Harmoni	1,300	4,555	20,775	0	0	26,630	
		B	Harmoni	Tomang	1,570	4,485	29,485	0	0	35,540	
		A+B	Both Direction		2,870	9,040	50,260	0	0	62,170	
B-6	K.S. Tubun	A	Tanah Abang	Tanah Abang	29,912	9,075	85	0	0	39,072	
		B	Tanah Abang	Gatot Subroto	23,471	14,960	30	0	0	38,461	
		A+B	Both Direction		53,383	24,035	115	0	0	77,533	
B-7	Keuangan	A	Simpuruk By Pas	Pejompongan	1,476	18,070	1,390	0	0	20,936	
		B	Pejompongan	Simpuruk By Pas	1,245	14,475	1,995	0	0	17,715	
		A+B	Both Direction		2,721	32,545	3,385	0	0	38,651	
B-8	Jend. Sudirman	A	Semanggi	H.I.	51	37,445	124,040	30,440	2,420	194,396	
		B	H.I.	Semanggi	0	36,430	105,250	20,595	1,380	163,655	
		A+B	Both Direction		51	73,875	229,290	51,035	3,800	358,051	
B-9	Rasuna Said	A	P.N. Timah	Menteng	0	33,075	13,725	0	0	46,800	
		B	Menteng	P.N. Timah	0	27,220	11,210	0	0	38,430	
		A+B	Both Direction		51	134,170	254,225	51,035	3,800	443,281	
B-10	Dr. Supomo	A	Pancoran	Manggarai	14	24,160	16,980	0	0	41,154	
		B	Manggarai	Pancoran	77	24,845	17,835	0	0	42,757	
		A+B	Both Direction		91	49,005	34,815	0	0	83,911	
B-11	Otista	A	Cililitan	Kp. Melayu	23,498	15,055	46,300	0	0	84,853	
		B	Kp. Melayu	Cililitan	26,201	14,615	40,195	0	0	81,011	
		A+B	Both Direction		49,699	29,670	86,495	0	0	165,864	
B-12	D.I. Panjeitan	A	Cililitan	Tanjung Priok	10,526	26,105	71,310	15,540	0	123,481	
		B	Tanjung Priok	Cililitan	11,950	29,110	83,590	11,360	0	136,010	
		A+B	Both Direction		22,476	55,215	154,900	26,900	0	259,491	
B-13	Raya Jatiwaringin	A	Pondok Gede	Kali Malang	8,473	4,880	1,170	0	0	14,523	
		B	Kali Malang	Pondok Gede	8,181	5,580	905	0	0	14,666	
		A+B	Both Direction		16,654	10,460	2,075	0	0	29,189	

Table 6.2.3 Estimated Bus Passengers Crossing Cordon Line

Location Code	Street Name	Direction		Number of Passengers						Total Number of Passengers
		Code	From	To	Small Bus	Medium Bus	Large Bus	Double Decker	Articulated Bus	
C-1	Pluit Selatan	A	Cengkareng	Grogol	167	3,320	6,675	0	0	10,162
		B	Grogol	Cengkareng	6	2,335	5,840	0	0	8,181
		A+B	Both Direction		173	5,655	12,515	0	0	18,343
C-2	Daan Mogot	A	Tangerang	D.K.I	17,303	9,975	18,230	0	0	45,508
		B	D.K.I	Tangerang	18,827	8,080	14,970	0	0	41,877
		A+B	Both Direction		36,130	18,055	33,200	0	0	87,385
C-3	Toll Pesanggrahan	A	Merak	Jakarta	112	1,290	51,585	0	0	52,987
		B	Jakarta	Merak	138	1,240	68,775	0	0	70,153
		A+B	Both Direction		250	2,530	120,360	0	0	123,140
C-4	Ciledug Raya	A	Ciledug	Kebayoran	16,203	29,085	1,640	0	0	46,928
		B	Kebayoran	Ciledug	10,465	18,510	1,285	0	0	30,260
		A+B	Both Direction		26,668	47,595	2,925	0	0	77,188
C-5	Ciputat Raya	A	Ciputat	Lebak Bulus	16,532	23,720	14,600	0	0	54,852
		B	Lebak Bulus	Ciputat	19,779	26,355	15,260	0	0	61,394
		A+B	Both Direction		36,311	50,075	29,860	0	0	116,246
C-6	Cireunde Raya	A	Pondok Gede	Lebak Bulus	8,191	1,250	460	0	0	9,901
		B	Lebak Bulus	Pondok Gede	7,850	2,850	270	0	0	10,970
		A+B	Both Direction		16,041	4,100	730	0	0	20,871
C-7	Rawas Bambu	A	Depok	Pasar Minggu	5,103	36,840	9,770	0	0	51,713
		B	Pasar Minggu	Depok	5,826	44,210	9,240	0	0	59,276
		A+B	Both Direction		10,929	81,050	19,010	0	0	110,989
C-8	Raya Bogor	A	Bogor	Jakarta	20,482	20,970	11,290	0	0	52,742
		B	Jakarta	Bogor	21,970	23,400	13,365	0	0	58,735
		A+B	Both Direction		42,452	44,370	24,655	0	0	111,477
C-9	Toll Jagorawi/Cibubur	A	Bogor	Jakarta	80	1,260	72,835	0	0	74,175
		B	Jakarta	Bogor	217	3,520	66,390	0	0	70,127
		A+B	Both Direction		297	4,780	139,225	0	0	144,302
C-10	Raya Pondok Gede	A	Pondok Gede	Kramat Jati	17,315	2,960	185	0	0	20,460
		B	Kramat Jati	Pondok Gede	25,062	2,795	255	0	0	29,112
		A+B	Both Direction		43,377	5,755	440	0	0	49,572
C-11	Toll Cikampek-Jakarta	A	Cikampek	Jakarta	2,146	5,580	93,020	0	0	100,746
		B	Jakarta	Cikampek	2,156	6,320	95,470	0	0	103,946
		A+B	Both Direction		4,302	11,900	188,490	0	0	204,692
C-12	Raya Kalimatang	A	Bekasi	Halim	19,027	80	60	0	0	19,167
		B	Halim	Bekasi	19,755	970	690	0	0	21,415
		A+B	Both Direction		38,782	1,050	750	0	0	40,582
C-13	Toll Cikunir-Cilincing	A	Cikunir	Cakung	27	9,280	24,655	0	0	33,962
		B	Cakung	Cikunir	36	9,470	23,650	0	0	33,156
		A+B	Both Direction		63	18,750	48,305	0	0	67,118
C-14	Bekasi Raya	A	Bekasi	Pulo Gadung	10,476	23,525	16,840	0	0	50,841
		B	Pulo Gadung	Bekasi	10,124	26,555	26,815	0	0	63,494
		A+B	Both Direction		20,600	52,080	43,655	0	0	116,335

Table 6.2.4 Estimated Bus Passengers Crossing Other Survey Locations

Location Code	Street Name	Direction		Number of Passengers					Articulated Bus	Total Number of Passengers
		Code	From To	Small Bus	Medium Bus	Large Bus	Double Decker			
1	Tamansari	A	Sukarjo W. Prati Mangga Besar	0	0	0	0	0	0	0
		A+B	Both Direction	26,753	10,030	29,475	11,745	580	80,583	
2	Gajah Mada Hawam Wuruk	A	Blok M Kota	17,918	9,935	29,375	7,125	1,000	55,353	
		B	Kota Blok M	46,671	19,965	58,850	18,870	1,580	145,936	
		A+B	Both Direction	385	6,925	26,530	0	0	33,840	
		B	Grogol Pluit	6,167	7,095	17,945	0	0	31,207	
3	Letumenten	A+B	Both Direction	6,552	14,020	44,475	0	0	65,047	
		A	Kemendekaan Senen	3,942	46,565	86,615	0	0	137,122	
4	Suprpto	B	Senen Kemendekaan	6,860	50,520	92,025	0	0	149,405	
		A+B	Both Direction	10,802	97,085	178,640	0	0	286,527	
5	Premuka	A	Pemuda Matraman	24	15,055	84,665	9,000	0	106,744	
		B	Matraman Pemuda	3	13,445	80,590	8,485	160	102,683	
6	Thamrin	A+B	Both Direction	27	28,500	165,255	17,485	160	211,427	
		A	Sudirman Monas	0	28,590	73,865	20,220	2,440	125,115	
7	Mas Mansyur	B	Monas Sudirman	0	26,690	69,060	17,625	1,640	115,005	
		A+B	Both Direction	0	55,270	142,925	37,845	4,080	240,120	
8	Jend. Sudirman	A	Karet Tengsin Harmoni	135	13,695	325	0	0	14,155	
		B	Harmoni Karet Tengsin	23	14,690	930	0	0	15,643	
9	P. Antasari	A+B	Both Direction	159	28,385	1,255	0	0	29,798	
		A	Ratu Plaza Semanggi	60	21,105	122,045	23,575	1,420	168,205	
		B	Semanggi Ratu Plaza	10	28,080	135,955	25,335	1,960	191,340	
		A+B	Both Direction	70	49,185	258,000	48,910	3,380	359,545	
10	R.S. Fatmawati	A	Cipete Blok M	84	29,485	860	0	0	30,429	
		B	Blok M Cipete	62	32,945	1,520	0	0	34,527	
11	Radio Dalam	A+B	Both Direction	146	62,430	2,380	0	0	64,956	
		A	Pondok Labu Blok M	78	26,025	8,035	0	0	34,138	
		B	Blok M Pondok Labu	29	38,205	5,430	0	0	43,664	
		A+B	Both Direction	107	64,230	13,465	0	0	77,802	
11	Radio Dalam	A	Radio Dalam Blok M	18	11,375	8,100	0	0	19,493	
		B	Blok M Radio Dalam	0	10,135	6,715	0	0	16,850	
		A+B	Both Direction	18	21,510	14,815	0	0	36,343	